

## MIND

## A QUARTERLY REVIEW

OF

## PSYCHOLOGY AND PHILOSOPHY.

## I.—NECESSITY.

BY DR. G. E. MOORE.

My primary object in this paper is to determine the *meaning* of necessity. I do not wish to discover what things are necessary; but what that predicate is which attaches to them when they are so. Nor, on the other hand, do I wish to arrive at a correct verbal definition of necessity. That the word is commonly used to signify a great number of different predicates, which do actually attach to things, appears to me quite plain. But, this being so, we shall be using the word correctly, whenever we apply it to any one of these; and a correct definition of necessity will be attained, if we enumerate all those different predicates which the word is commonly used to signify: for the only test that a word is correctly defined is common usage. The problem which I wish to solve is different from either of these. It is a problem which resembles them in its universal application. There is a solution of it not only for necessity but for everything that we can think of; and in many cases the discovery of this solution appears to me to be of fundamental importance for philosophy. The nature of this problem may perhaps be exhibited as follows: When a man says 'A is necessary' or 'red' or 'round' or 'loud' or, whatever it may be, he may be wrong in three ways. (1) He may be using the word 'necessary' in a sense in which it is not commonly used. For instance the thought which he intends to convey may be that 'A is red'; and then, whether A is red or not, he is committing a verbal error in saying that 'A is necessary'.

(2) He may be using 'necessary' in one of the many senses in which other people use it, but he may be mistaken in supposing that A really has the predicate, which he rightly denotes by that word. (3) He may both be using the word correctly and also be right in supposing that A has one of the predicates which 'necessary' commonly signifies; and yet he may be wrong in a different way. For while rightly thinking that it has one of these predicates he may be mistaken in supposing that it also has some other of them. That 'A is necessary' we must grant him to be both verbally and substantially correct; and again that 'B is necessary': and yet in so far as he includes with that predicate which A really has the predicate which B really has, his statement that 'A is necessary' may be very incorrect. All this is obvious enough, and such confusions have been fully recognised as a frequent source of fallacy in reasoning. What I wish to point out is that this mistake is not a mistake about the meaning of a word, nor yet about a question of fact. The question which we must answer in order to decide whether a man is mistaken in this way is quite different from either of the two questions: Is he using this word correctly? or Has the thing in question that predicate? For there may be no doubt at all that we should answer Yes or No to either of these questions; and yet there may be much doubt as to what the predicate in question is. While never doubting that certain things have certain predicates, and that all these predicates are commonly signified by the same word, we yet may be in doubt whether there is anything in common between these various predicates and, if so, what. We may be right on both the former points and yet be wrong on this. This, then, is the question which I intend to raise, in asking what is the meaning of necessity. My main object is not to discover whether any or all propositions of the form 'A is necessary' are true or false, nor yet whether they are correctly expressed; but what their *meaning* is.

But, though this question is the one I mainly want to answer, I see no means of reaching my conclusion except by a partial discussion of both the others. Their relation to it is indeed peculiar. Logically it is presupposed in both of them: for 'A is necessary' is not true or false, unless it have some definite meaning; and, if the word 'necessary' is usually applied to certain predicates, it is predicates with some definite meaning to which it is usually applied. We might then be tempted to say: We must know exactly what it is we are talking about, before we can know whether what we say of it is true or false. And it is a fact that an exact

knowledge of what we are talking about will often lead us to see that what we had thought true of it is false. But the order of discovery is generally just the reverse of this. We must have judged correctly that certain collections of objects were three in number many times over, before we could know exactly what three was. And so here I must examine the cases in which things are said to be necessary, before I can discover what necessity is.

Now it would appear there are three classes of entity which are commonly called necessary. We may call a connexion necessary, or we may call a thing necessary, or we may call a proposition necessary. And there is at least one property which may be common to all these three. All three of them may be forced upon the mind. We may have the feeling of compulsion with regard to them. We may feel compelled to believe that two objects have a certain relation, or that a certain thing exists, or that a certain proposition is true. But this feeling of compulsion, though it may probably have been the origin of all our ideas of necessity, has certain properties which prevent us from identifying it with them. For it accompanies different beliefs at different times and in different persons. If we were to say that a necessary truth is one, belief in which is accompanied by a feeling of compulsion, we should have to admit that the same truth was necessary at one time and unnecessary at another, and even that the same truth might be simultaneously both necessary and unnecessary. But it is certain that necessary is often used in a sense which would exclude this possibility. Necessary truths, it would be said, are truths which are always necessary: and whether there are any such or not, we certainly mean by them something different from truths, belief in which is sometimes accompanied by a feeling of compulsion. Nor can it be said we only mean such truths as are *generally* accompanied by such a feeling. For the truths which are most commonly regarded as necessary do not now generally excite any such feeling when we believe in them. A belief in the truths of arithmetic, for example, has now become so habitual, that we obtain it with the greatest ease. And, if it be said that these beliefs are nevertheless all of such a nature that they would generally excite the feeling of compulsion, if we tried to believe the opposite, it may be admitted that this is true. Probably in most cases we should find it difficult to believe the opposite of those truths which we call necessary. They would force themselves upon us in spite of our efforts. But there is no reason to believe that any truths have this property *universally*. It

would be a bold assertion that no one ever had believed or would believe with ease that two and two make five. And if the statement be general only and not universal, it would apply to many more truths than are commonly thought to be necessary, as, for instance, to the existence of the sun and of the earth. It can scarcely be maintained that such facts have failed to be called necessary, solely because it was not perceived that their opposites were hard to believe. The most plausible way, then, in which it might be attempted to show that the meaning of necessity always involved a reference to the feeling of compulsion, fails at least to cover the distinction between necessary and existential truths. The most plausible expression of this theory would take the form : That is always necessary, belief in which would generally excite a feeling of compulsion, if we tried to believe its opposite. And this definition of necessity, while it is doubtful even whether it would apply to most cases of supposed necessary truths, certainly fails in that it will apply to many others as well.

It seems questionable how far this feeling of compulsion is to be identified with the impression from which Hume sought to derive the idea of necessity. But his account of how we come to think events necessarily connected certainly implies quite a different meaning of necessity, which must be carefully distinguished from this. What he says is that when a succession of two events has been repeated often enough, the mind has a habit of reproducing the idea of the second on the occurrence of the impression of the first. He does not seem to maintain that it *feels compelled* to have the idea of the second event. But unless he does mean this, where is the impression of necessity for which he was seeking? Either he must mean that there are constant successions among mental events just as there are among physical; but in that case it would seem that the succession in the mind can give rise to no idea different from that to which the physical succession might of itself give rise. Necessity in this case means merely constant succession, and Hume's reference to the habits of the mind is quite superfluous. Or else he means that the mental habit does actually compel us to think of the second event on occurrence of the first. But in this case he is illegitimately transferring to the contents of the mind that very idea of necessary connexion which he is seeking to deny to physical events. For, on his own showing, we have no title to say anything more of mental contents than that they do succeed one another in certain fixed sequences. His question is : What is the meaning of



saying that a prior event compels another to occur? And he cannot legitimately assume that he knows the meaning of this where the events are mental and not where they are physical. To the feeling of compulsion he might indeed have referred us, as an exclusively mental impression. But this he does not explicitly do. And the view that habits do compel the mind, not that we feel compelled by them, implies quite a different meaning of necessity, which he might just as easily have derived from the physical events themselves.

This second meaning of necessity, which Hume thus seems to imply, is in fact the very meaning that is involved in the connexion of cause and effect. We do commonly think that when some events have occurred others will necessarily follow; and when we think this, we have no idea in our minds that we are compelled to think so. We do apply the idea of necessity directly to the connexion between two events; and the only question is what is the idea that we thus apply. Hume certainly set out to answer this question, when he inquired what impression it was of which the idea 'necessity' was a copy. But in his answer he was led off into two quite different issues. His explanation is in the first place only an explanation of why we come to think it, not of *what* we think when we do think it. In order to get the latter, he would have had to introduce the feeling of compulsion: as it is, he merely assigns a cause for our belief that there are causes. And in the second place he confuses the question concerning the meaning of necessity with the question of its valid application to successions of events in time. He wishes to deny that there is any necessary connexion between events which are commonly called causes and effects: he holds that they are not necessarily related in the same sense in which two similar ideas are necessarily related. But this is to allow that necessity does mean something other than constant succession: for he does not deny that events have the relation of constant succession.

Hume has, then, certainly given no answer to the question: What is the meaning of that necessity which is commonly predicated of causes and effects? In so far as he tries to explain why we come to think of certain events as necessarily connected, he seems to imply both that there is such an idea as necessary connexion, and that it may be validly applied to certain mental events. But, on the other hand, he holds explicitly that no connexion except that of constant succession may be validly applied to events; and, in the second place, he points out a *prima facie* difference between two

events that are thus related and two ideas that have the relation of similarity. In so far as he appeals to this difference he may be taken as allowing that there is an idea of necessary connexion which is not identical with that of constant succession; and this idea may be that which we assert of a cause and its effect, whether it really does apply to them or not. Only by his denial that this is the case—by his assertion that there is nothing in common between the idea of a necessary truth and the idea of a causal connexion—does Hume really contribute anything to the question what the latter means.

We have it, then, suggested that there are two forms of connexion commonly called necessary, and that there is nothing in common between these two; and this view seems still to be held by those who oppose a 'real' to an 'ideal' necessity. In order to decide whether it be a true view, it will be necessary to discuss at some length each of these two forms of necessity, which are at first sight so different—the necessity of necessary truths and the necessity of real causes.

Now the line which Kant took in answering Hume was based, in part at least, on a denial that they were so different as Hume had thought. Kant pointed out that truths, which Hume had allowed to be necessary, on the ground that they were analytic, were, like the relation of cause and effect, synthetic. The truths of arithmetic were both synthetic and necessary, and, if Hume had considered this, it would have destroyed his reason for allowing no common element between ideal and real necessity. Kant, however, does still allow that there are such things as analytic truths, and that they are necessary. Though, therefore, he classes together, as having a common element, two forms of necessity, which Hume had separated, he still allows another form, which may or may not be different in meaning from this. He does not decide the question: In what sense are analytic truths necessary? Now, if we take the view that the sense is different from that in which synthetic truths are necessary, there would seem to be two alternatives open. Either (1) it may be said that 'necessary' here merely means 'analytic'; that the two conceptions are identical. In this case it becomes an analytical truth that analytical truths are necessary; and no exception can be taken to the separation of this meaning of necessity from all others, if only there be any meaning in analytic truths. But, at the same time, this necessity becomes utterly unimportant. It is impossible to draw from it any inferences with regard to the truths that

possess it, as that they have superior certainty, or are universal and eternal. For any of these predicates can only be asserted of it on the ground of a synthetic truth. But if (2) we say that the necessity of analytic truths is not identical with their being analytic, then that they are necessary is a synthetic proposition. And only, while this synthetic proposition is necessary, can any analytic proposition be so. Even, then, if there be some special necessity attaching to analytic propositions it is secondary to that which attaches to some kinds of synthesis.

But there is much doubt whether any truths are analytic. Any proposition, it would seem, must contain at least two different terms and their relation; and, this being so, the relation may always be denied of the two terms without a contradiction. It takes two propositions to make a contradiction: the law of contradiction itself excludes the possibility of any single proposition being both true and false, or self-contradictory. And hence the definition of an analytic proposition as a proposition, the contradictory of which is self-contradictory can apply to nothing. If, on the other hand, we take the definition that it is a proposition of which the predicate is contained in the subject, then either its meaning is that that predicate is united in some way with the other predicates, which along with it define the subject: in which case the analytic proposition is as synthetic as you please; or else the predicate is simply identical with the subject. But in this latter case, where the supposed analytic proposition may be expressed in the form,  $A$  is  $A$ , we have certainly not two different terms, and therefore we have no proposition.

Moreover, the law of contradiction itself, than which nothing is commonly supposed to be more plainly analytic, is certainly synthetic. For suppose some one to hold that Not every proposition is either true or false. You cannot deny that this is a proposition, unless you are also willing to allow that the law which it contradicts is not a proposition; and he may perfectly well maintain that this is one of those propositions which is true, and the contradictory of which, your law, is false, although this is not the case with every proposition. Whereas, if you urge that it is included in the notion of a proposition that it should be either true or false, either your law becomes a pure tautology and not a proposition, or else there is something else in the notion of a proposition beside the property that it is either true or false, and then you are asserting a synthetic connexion between this property and those others.

We may, then, safely assume that there is no such thing as a special necessity belonging to analytic truths, because there are no analytic truths. But I do not wish to deny that the law of contradiction is necessary. Nothing would generally be thought to be more certain or more necessary than this; and hence it will be a particularly good instance in which to examine what may be meant by calling a synthetic truth necessary.

What then is the necessity which attaches to the law of contradiction?

Now there are several other predicates which have been or are commonly associated with necessity as belonging to truths like this: eternity, for instance, absolute certainty, and universality. It may, then, turn out that necessity is identical with some one of these or with the combination of them all. If, on the other hand, we find it impossible to identify necessity with them, there will be some probability that any remaining property which may belong to the truths in question will be that which is meant by their necessity.

First, then, to consider eternity. If by this be meant that the truths in question are true at every moment of time, it cannot be a mark which distinguishes necessary from any other kind of truths. For, universally, what is once true, is always true. Every truth is true at every moment of time; whereas, when we talk of necessary truths, we certainly mean that only some truths are necessary and that others are not. That every truth is true at every moment of time has not indeed been universally perceived; but it needs no long discussion to show that it is so. Truths which have been supposed to be exceptions are such as assert that so and so exists now, whereas it did not exist in the past or will not exist in the future; and it must, of course, be admitted that things do exist now, which neither have always existed nor will always exist. But the *truth* is not the *thing*: the truth is that the thing existed at some moment of time, which we designate conveniently as present or past or future, because we thereby point out its temporal relation to another existing thing, namely our perception of the truth. That Cæsar was killed on the Ides of March, to take Hume's example, if only it be true, was, is, and will be always true: no one will deny this. And it is also true that that particular date was the present once and is not the present now; and these propositions also are eternal truths. For by 'now' nothing more is meant than a particular date, which we all can distinguish from other dates in the objective time-series, by the fact that the perceptions which fall

on that date have, when they fall, a peculiar quality—the feeling of presence.

But if, on the other hand, by 'eternal' truths be meant truths which are true at no moment of time, then it would seem that in the same sense all truths are true at no moment of time. This is, indeed, only a more accurate way of expressing that same property of truths, which is popularly expressed by saying that they are always true. For a truth is not to be regarded in the same way either as a particular configuration of matter which may exist at one moment and cease to exist at the next, nor yet as matter itself, when it is conceived to exist at every moment. The truth that something exists, it would seem, never does exist itself, and hence cannot be accurately said to occupy any moment of time. Accurately we should express that eternity, which is the property of all truths, by the negative statement that they are incapable of change, without thereby implying that they are capable of duration.

Eternity, then, will not distinguish the Law of Contradiction from any other truth; and yet we should be unwilling to say that it was not necessary in a sense in which some other truths may be distinguished from it. Perhaps, absolute certainty will furnish this distinguishing mark.

Now if absolute certainty be understood in a psychological sense, it will not furnish a universal mark. That we are more certain of the Law of Contradiction than of any other truth, I will admit, though it would be difficult to prove it. But then it must be admitted, on the other side, that there was a time in the history of the race when men were very certain of many, particularly the most contingent, truths, before they had even thought of the Law of Contradiction; when, therefore, they could not be certain of it at all. It is, indeed, remarkable that all the truths, which we now consider particularly necessary, are so abstract that we cannot suppose them to have been thought of or believed in till after many other truths had enjoyed a long lease of certainty. That necessary truths are, then, universally more certain than others, cannot be maintained; and if it be said that nevertheless, as soon as both are thought of, the necessary ones become at once more certain, or that they are capable of greater certainty, it is fair to suspect that this is said on the *a priori* ground that, since they are more necessary, they must be more certain. Empirical evidence of it is certainly not forthcoming. Yet no one would hesitate to say, for the lack of this, that necessary truths do differ from others. It would seem, then, that certainty, in any psychological sense,

can not be that which makes a necessary truth what it is. If certainty be used in any other sense, it may be discussed more conveniently, after we have considered universality.

The universal certainly would seem a more likely candidate, than either of the others, for the honour of identification with the necessary. They have been ranked together by Kant as joint marks of the *a priori*. But here again it is necessary to make a distinction of meaning. For, in the first place, a truth may be said to be universal, in the sense already considered as meant by eternal, namely that it is always true. This, we found, would not serve to distinguish any one truth from any other. We must, then, find some other meaning for universality if it is to be identified with necessity. And we have obviously got a universality of some sort, which is not this, in the Law of Contradiction. For it asserts that every proposition is either true or false; and inasmuch as it thus applies to every instance of the class 'proposition' it may be said to be universal. But this suggests a distinction which is not without importance. For what is true of every proposition is that *it* is true or false; it is not true of any proposition that every proposition is true or false; but it is this latter which is said to be necessary. The necessary, therefore, is not universal in the sense of being a property common to all the instances of a certain kind. If, then, we are to say that necessity is connected with universality, we must say it in the sense that every necessary proposition is one which asserts that some property is to be found in every instance in which some other property is found. But is this true of all necessary propositions? It would seem it is not true of arithmetical propositions, for instance, of the proposition that  $5 + 7 = 12$ . For here we assert nothing about a number of instances. There are not several instances of 5 and of 7; there is but one 5, one 7 and one 12. And yet we assert a connexion between them which is commonly held to be necessary. It is indeed true of every collection of things which number five that, if you add to them a collection which numbers seven, the whole collection will number twelve. But different collections of five things, are not different fives; and though a proposition about collections of five things may be universal in the sense in which the Law of Contradiction is universal, that is no evidence that a proposition about five itself is so. It is not, then, true that every proposition about a universal is a universal proposition. For every number is a universal in the sense that it is a property of many different collections; and yet a proposition asserting the connexions between

numbers makes no assertion about a number of instances. It has indeed been suggested that propositions such as the Law of Contradiction might be more properly expressed in a form analogous to arithmetical propositions; that we should say, not: Every proposition is either true or false; but: Proposition is either true or false, just as we say: Man is mortal. But there seems reason to suspect that these propositions are really universal in a sense in which arithmetical propositions are not so, and that 'proposition' is not a property of propositions in the same sense in which any number is a property of the collection of which it is predicated. For even granted that 'Man is mortal' has a meaning, how can we get from this to the proposition 'All men are mortal,' except by adding that the property of mortality is *always* connected with the other properties of humanity, wherever these latter occur? Whereas from the proposition that  $7 + 5 = 12$ , you can arrive at the conclusion that all collections of five and seven are equal to collections of twelve, without the premiss that  $7 + 5 = 12$ , wherever they occur; for the reason, which seems to be true though it will hardly be thought convincing, that 5 and 7 never do occur. For myself, I cannot perceive that 'Man is mortal' has any meaning at all except that 'Man is *always* mortal'; and similarly with the Law of Contradiction, since propositions do not occur in time and therefore cannot be said to be *always* either true or false, the ultimate expression of it would seem to be that *all* propositions are either true or false.

We must, therefore, say that some necessary propositions are not universal in the sense that they make an assertion about a sum of instances, whereas other necessary propositions are universal in this sense. This universality too, then, will not furnish the meaning of that necessity which belongs to necessary truths. But is there, perhaps, some third kind of universality which is common both to the propositions of Arithmetic and to the Law of Contradiction, and indeed to all propositions which have a *prima facie* claim to be considered necessary truths? There is, I think, a sense in which, not indeed strict universality, but a certain generality may be claimed for all of them. They may all be said to be propositions of a wide application; and a discussion of what exactly this wide application is will furnish my answer to the question what is meant by that necessity which may be truly ascribed to necessary truths. It will then only remain to inquire what, if anything, there is in common between this so-called 'ideal' necessity and causal or 'real' necessity.



This generality of necessary truths is what I take Kant to have established in part of his diverse proofs that they are *a priori*. But whereas he expressly maintains that if you see a truth to be absolutely necessary you may infer it to be *a priori*, my contention is that you can but show it to be *a priori*, and that you then add no new or true fact about it, but only a new name, when you also dub it necessary. The theory, briefly stated, is this: That *a priori* means logically prior, and that any truth which is logically prior to some other true proposition is so far necessary; but, that as you get more and more true propositions to which a given truth is logically prior, so you approach that region within which the given truth will be said to be absolutely necessary or *a priori*. There will, then, be only a difference of degree between necessary truths and many others, namely, a difference in the number of propositions to which they bear a certain logical relation; but there will be a difference of kind between this logical relation and any other of the notions by means of which it has been sought to give a definition to necessity. If there be any truths which have this logical relation to all other propositions, then, indeed, the application of these would be not merely wide but absolutely universal; such, it would seem, is the Law of Contradiction and, perhaps, some others: and these, perhaps, might be said to differ in kind from all others in this respect also. But into this question, which is exceedingly difficult, I do not propose to enter. It is sufficient for my purpose that there are some truths, commonly called necessary, certain axioms of geometry, for instance, which have not this absolutely universal application, but which have a very wide one: and that this, at least, may be said of all necessary truths.

The logical relation, by means of which I propose to define necessity, is one to which constant appeal is made in philosophical arguments; but the appeal is almost as frequently misused. It is said that one proposition is presupposed, or implied, or involved in another; and this argument is considered to be final. And so indeed it is, if only the proposition in question is really presupposed or implied or involved. It would seem, therefore, desirable that we should be clear about what this relation, which may be designated generally as logical priority, really is: and such clearness is essential to my definition of necessity. I propose, therefore, to try to point it out, but, without attempting to assign its exact limits, or to give an exhaustive enumeration of the various kinds of logical relation, which may all be justly

called by this one name. It needs, I think, only to be seen in any instance, in order to be recognised. Thus when we say: Here are two chairs, and there are two chairs, and therefore, in all, there are four chairs; it would commonly be admitted that we presuppose in our conclusion that  $2 + 2 = 4$ . Yet it is plain that many a man may arrive correctly at the number of objects before him, in an enormous number of instances, without envisaging the so-called abstract propositions that  $2 + 2 = 4$ , or  $3 + 1 = 4$ , or  $1 + 1 + 1 + 1 = 4$ . These, therefore, are different propositions from those which we commonly make about four objects, and yet they are presupposed in all of them. Similarly, when a man says: This is white, and that is black, and therefore these are different objects; we should say he implied that black and white are different. And this in itself is a common enough case. But if we go farther and say: That things which have different properties are different; this is a principle which is involved in every particular judgment of difference that we make; and we should be unable to give any reason for our judgment that the things are different, except that this and that property, which belong to them respectively, are different. These then are cases of logical priority, and we can determine whether other supposed cases are also of this nature, by considering whether they are like or unlike these. And by no means all cases of inference are of such a kind. For instance, if one says: There has been a horse here: and we ask why; his reason may be: See these hoof-prints. But that a horse made them is by no means presupposed in the fact that there are hoof-prints there. And yet the inference may be perfectly valid: both propositions may be true, and the one may follow from the other. All propositions, then, are not connected by way of logical priority; whereas some propositions are. And what universally marks a prior proposition is that it may be true, even though the particular proposition, to which it is prior, should be false. And thus a logically prior proposition is universally prior both to one false and to one true proposition. And, moreover, what Kant showed is that there are a number of propositions logically prior to almost every true 'empirical' judgment that we make; and such empirical judgments form an immense majority of all the true propositions of which we are cognisant. They cannot be true, unless the propositions they involve are true: but these may be true, even if the empirical judgments are false.

That there is, then, this class of logically prior proposi-

tions, and that they approach to universality in the sense that many of them are prior to a very great number of other truths, will hardly be denied. And that they coincide to a remarkable degree with the class of 'necessary truths' seems no less evident. But moreover they seem to coincide with the class of 'most certain' propositions, in any sense of certainty which is not psychological. For any one who is looking for a perfectly certain proposition from which to deduce his system of philosophy will in general try to show that it is logically prior to all other propositions. We may take as an instance the famous '*Cogito, ergo sum*'. Here the conclusion that 'I am,' because I think, is made by way of logical priority: and it really is logically prior. How far Descartes used the same argument in defence of the proposition that he thought, I am unaware: the certainty that he primarily claimed for it is certainly a psychological one, namely that he could not doubt it. But modern idealistic descendants of his constantly claim superior certainty for the '*Cogito*' itself, on the ground that it is logically prior to other propositions. Many will say straight out that thought is presupposed in all existence and all truth, and will draw the conclusion that the existence of thought is therefore the primary certainty. Others will say, in more popular forms: You cannot deny that, whatever you think, it is implied that you do think it; and therefore the ultimate certainty is that you do think it, not that what you think is true: if you deny that you are making a statement, it is impossible to argue with you. Whether or not the statements which are thus argued to be more certain are really logically prior, is another question; but it is worth while pointing out that those who use this argument are admitting the proposition that 'Logical priority is a test of certainty' to be at least as certain as the proposition which they endeavour to establish by its means: this proposition is, at all events, logically prior to their argument.

And so, if we say that no proposition is necessary in itself, but that when we call it necessary we can only mean that it is connected in a certain way with other propositions, it may be asked: But what of this connexion? Is not that necessary in itself? I should answer: Only in the same sense as those propositions, which it makes necessary, are necessary. For every statement of the form: This is involved in that, is itself a proposition; and when we say: If you admit that, you must admit this: they are necessarily connected; we only mean: This follows from that; and the general principle that what follows from a truth is itself true

is necessary, because it is implied in every argument. That any one thing does follow from any other is, indeed, not always a necessary proposition: but that, if it does follow, then, if the first be true, the second is also true, is a necessary proposition. It is logically prior to any statement such as: Since this, then that. And such statements are not among the least common of truths.

We have, then, an answer both as to the meaning of necessary propositions; and also as to the meaning of necessary connexion between propositions. The first are necessary when they are implied in a large number of other propositions; and as to the second, it is the proposition that the truth of what is implied follows from the truth of that which implies it, that is necessary. The connexion itself is not necessary, but the truth, that if it is there, then a true conclusion may be drawn, is necessary. It remains, then, only to consider the third class of entity which may be called necessary—the class of things and their connexion.

That, when we call a thing necessary, we mean that it is cause or effect of some other thing, is evident. The question is then of that necessity which is involved in the notion of causality. Whether there be any causes—whether from the existence of one thing you can ever validly infer the existence of another—is a different question. But that if there be a cause, it is necessarily connected with its effect, and that its effect is necessary, will not be questioned. The question is merely of what this necessity means. And my answer to it is, I fear, deplorably brief. For I entirely fail to see that there can be any relation between the two things, except that from the proposition 'The one exists' there is a valid inference to the proposition 'The other existed' or 'will exist'. If it does really follow that, since one thing exists, another has existed or will exist, what more necessary relation can be desired? The supposed 'real' necessity will, then, like the supposed 'ideal,' be reduced to logical necessity. There will, indeed, be a difference. The existence of one thing is certainly not presupposed in that of another: the relation between them is certainly not that of logical priority. If we are to infer the one from the other, it must be on the basis of the principle that whenever it is true that one thing exists, it is also true that some one other thing has existed or will exist. And this principle may itself be necessary, as logically prior to other propositions. But the particular causal inference always requires not only this for its premiss, but also that some one thing does exist. In this, however, there is no reason to dispute that the necessity is logical.

And in maintaining that it is so, we shall only differ from Hume in that whereas he said 'A thing is an effect when we *do* infer its existence from the existence of another thing,' meaning only that our belief in the latter causes us to believe in the former, we shall have to say 'A thing is an effect, when its existence may be *validly* inferred from the existence of another thing, whether we make the inference or not'.

## II.—THE DOUBLE EFFECT OF MENTAL STIMULI; A CONTRAST OF TYPES.

BY MRS. SOPHIA BRYANT.

### THE DOUBLE EFFECT OF MENTAL STIMULI.

A MENTAL stimulus may be more or less successful, or may fail altogether, in producing its appropriate mental effect as a manifestation of consciousness; but we should hardly call it a mental stimulus if it produced no effect on the organ of consciousness, with manifestations of the instinctive or reflex, if not of the conscious, type. A mental stimulus might therefore be defined as an event which may produce a change in consciousness, and which does produce a change in the organ of consciousness. The typical—not the universal—effect is that the organ stimulated reacts in some way on the rest of the organism, and thereby on the environment, and that some change in consciousness is also produced, in consequence of which there may or may not be further reactions later. Thus the typical effect is primarily double. But stimuli may produce only the one or the other of these effects. For instance in all reflex action there is no change in consciousness, while in that vivid but passive hearing and seeing which is I think possible, though rare, there is nothing except this change. The latter case seems to be well exemplified in the extraordinarily vivid impressions passively made by details in the scenes and sounds presented when the active attention is absorbed in thought or feeling as in times of great anxiety or grief. Between the two extremes there are infinitely numerous intermediate degrees in the ratio between these two constituents of mental life, which might for the moment be called conscious and organic, but for which I will presently suggest terms more precise.

The purely organic reactions are unconscious in this strict sense that the mind is not at all aware of their genesis, *i.e.*, does not know anything of their happening before they happen. They are no part of our subject matter except

in so far as the question may be raised : Does their occurrence in the organ of consciousness prevent the occurrence of some mental event ? Clearly this is but part of the more general question which claims our attention as preliminary to all others. Is it a property in the reaction of an organ of consciousness that its quantity is divisible between the conscious and the unconscious effect, so that the more splutter the less mind and *vice versa*.

This question reaches far. If we answer it in the affirmative, we imply that on the occurrence of consciousness a quantity of physical energy actually disappears from the physiological circulation, taking on some special form, the physical correlate of consciousness, in the evolution of which the principle of the transformation and conservation of energy is exemplified. The organ of consciousness, as such, effects this transformation, and the sum of ordinary physiological energies which stimulate the organ are, in part or whole, transmuted by it into a new physical energy which manifests itself in consciousness. If this be so, then consciousness is practically (though without detriment to the continuity of the laws of material energy) an absorbent of physical energy in the ordinary senses : it uses up the energy which even in a conscious organism might be otherwise employed.<sup>1</sup>

It is well to realise the magnitude of the question : thus, we get a clearer view of the generality attaching to the answer. If it is ever true that consciousness uses up energy, it is always true, notwithstanding appearances to the contrary in the vicissitudes of a very complex being. The explanation of such appearances forms however a topic in itself.

Is there then any evidence to show that on the occurrence of a mental event increase of consciousness *per se* has the direct effect of diminishing either outgoing or interorganic activity, or both ? To take the simpler case first, are the muscular manifestations reduced as the consciousness deepens ?

At least there are many indications that this may be so. Absolute quiescence is favourable to intense thought, and more obviously to intense feeling. Concentration of mind brings on a stillness in all the muscles, which is broken only

<sup>1</sup> It should, of course, be remembered that equality is not to be expected between the external stimulus and the sum of physical and psychophysical energies evoked. The organism as organised stands in fact for so much potential energy, and it recruits its stores by nutriment from the environment. The chief function of the stimulus is to let loose this potential energy : it is an agent for the conversion of the potential into the actual.



in so far as muscular movements are modes of expression necessary in some measure for the development of thought: the ear, the eye, the muscles of articulation and even of gesticulation may be drawn into play. But herein the mixed nature of thought comes into play: it swells by concentration deepening in itself, but it grows by expansion developing beyond itself: while based on the concentrated passivity of the inner sense it consists in the active co-operation of all sensibility.<sup>1</sup> Nevertheless the central fact of quiescence in deep thought remains significant; for the characteristic of deep thought is the endeavour to win a more intimate sense of the things that are in mind. In this endeavour the activity of thought itself seems to be stilled: we listen inwardly and stay our thinking.

In deep feeling the quiescence of movement is still more obvious, except when the feeling is painful and rouses effort to be quit of it. Such effort is often indeed no more than a restless activity undertaken to dissipate the painful concentration of energy, and this tells in confirmation of our general view. Sometimes feeling of even the painful kind is so great that there seems to be no energy available for an effort of dissipation; and this, I suspect, is not only because of the exhaustion of pain as pain. Pleasant feeling, however, supplies the test case because it is feeling that tends to sustain itself, and no one having had both experiences would hesitate to say that the joy which makes one jump for joy is less intensely felt than the joy which is enjoyed in the full silence of quiescence.

The evidence of these immediate experiences can only be found by careful introspective observation of each one for himself. It is necessary, however, to be sure that, in a hurried hyper-active life, we ever give ourselves opportunity for moods of deep thought or sustained feeling. In some ways the negative test may be more readily available. To dissipate feeling, to escape from thought, physical exercise is the most effectual of all methods. I find it almost difficult, even when I desire it, to take a simple walk and think deeply. The man who thinks and walks conjointly—a wholesome practice and certainly effective when the brain needs to be stimulated through the circulation—will be found to pause at the deep points of his thought, though it may help him

<sup>1</sup> Muscular activity has no doubt a certain efficacy in stimulating intellectual activity due to the effect of exercise in stimulating the circulation; and this effect is probably favourable on the passive as well as on the active side of mind.

to walk hard and thump the ground at the knotty points of an imaginary argument.

Indirect evidence is not rare though less certain. It has its use as cumulative in building up a basis of probability. Exuberant expression is well known to go often with shallowness of feeling, violent exasperation with little real anger, plentiful grumbling with slight discontent, irritability with insignificant irritation. The last case is very curious: we sometimes encounter persons so full of perpetual quiet quarrelsomeness with the small incidents of life—the weather, the gnats, the hardness of their beds, or the softness, the air, the food, and all minor things—that we tire ourselves out by sympathy with the sufferings of their ill-balanced physique. But it is only we—not they—who are seriously worried. They do not “worry” really in themselves: they only worry us. More strictly the expression is out of all proportion to the consciousness: the incidents do upset them, but most of the irritation escapes in external irritability. The person in marked contrast suffers irritation as such with the minimum of outward show, until the point is reached when the will comes into play to do something. The poets know this when they tell us in many ways of the “grief too deep for tears,” and to common experience it is very familiar.

A grief without a pang, void, dark and drear.

A stifled, drowsy, unimpassioned grief

That knows no natural outlet, no relief

In word, or sign, or tear.

On the other hand it must be remembered that expression of feeling is frequently a stimulus to further feelings of the same kind: the worrying people worry themselves from the outside, by magnifying their troubles objectively. Self-control restrains the excess of feeling in this way, though the persons of good natural self-control are likely to be so partly because of deeper natural feeling.<sup>1</sup>

<sup>1</sup>The following example is curiously definite. Two friends A and B compared notes as to their experiences on the extraction of a tooth under the influence of nitrous oxide. When A revived after the operation, the dentist said: “I fear it hurt you badly in spite of the gas”. She looked up surprised and said: “I never felt it at all”. “Well,” he said, “you screamed like one in agony.” In B’s case there were two teeth. On reviving she began the conversation by the remark: “That second one was much the worst”. This time the dentist was surprised, because the comment was true. “Surely you did not feel them?” he said. “You were so perfectly still and silent.” She had felt them vividly and distinctly, though not for what they were, and the difference in conscious disturbance between the two operations was specially conspicuous. It would seem that in these two persons to feel meant not to scream and to scream meant not to feel.

Thus there is ground at least to suspect that one fundamental contrast in mental type arises out of difference in the distribution of psycho-physical energy between manifestations of physical and of psychical life. The contrast may be partial, affecting some manifestations rather than others in the persons compared, but probably it occurs more readily as a general characteristic, and it is thus that it concerns us here. An explosion of energy takes place in the organism. In the one type the greater part passes on to do something at once. In the other the greater part passes into consciousness, and if an act emerges it is a conscious, a considered, act. Between these two extremes there may be all grades in the ratio of distribution. Thus one person may be in any degree more conscious of his disturbances than another, whatever the disturbance, and if our analysis be correct, he will be less physically agitated in a corresponding degree.

A question now arises which must be faced, even if we can only parley indecisively with it. Is the intenser consciousness after all only due to a higher degree of centralisation in the organism? Is it that to a greater extent disturbances, wherever occurring, pass through the centre (which may be a metaphorical way of saying that they reverberate through the whole) so that the effect is a more completely organic effect and therefore more conscious, ending in considerate action if in action at all? Obviously, if there occurs this widely-reaching organic disturbance, the activity that follows will be a more adequate translation of the stimulus into the agent's language of act. Also there would be more consciousness, the points being many instead of few. But such an increase of consciousness has the form of multiplicity. We know it in experience as different from intensity. Comprehensiveness of sensibility in a momentary experience is one thing; depth of sensibility quite another. The great man's gift of insight is both. The two are not opposed as shallow novel writers sometimes seem to assume, the one turning probably on unity of organisation, the other on this quality now under consideration for which we claim an independent existence. Certainly it would seem from experience that this widening of effect may occur without a deepening of consciousness to correspond. All highly-organised instinct bespeaks centralisation: instinct may be so highly organised that the act is adequate to the best reason of the man, and yet takes place unconsciously. Even in our intellectual work much that we do, as part of some highly-wrought intelligible whole, is done with a minimum of consciousness, *i.e.*, without an idea of it before it is done. We add mechanically; we

spell very mechanically; we even accomplish the routine of thinking mechanically. Certainly the flow of words in public speaking partakes often of the mechanical nature. Unity of organisation seems indeed favourable to the economy of consciousness;<sup>1</sup> and this consideration confirms the view that the deepening of consciousness is a qualitative process *per se* depending, not on the sweeping action and reaction of centre on centre, but on the transformation of energy within the centre concerned.

I suggest, therefore, that life being partly of the nature of highly-organised, fresh and in effect intelligent instinct, and different persons apt to *act* similarly and with equal freshness under the same circumstances, the one consciously and the other unconsciously—the latter action being the more rapid and easy—there is reason to think that any part of the mind organ, and the whole of it, may work either instinctively or consciously. In the latter case, energy is transformed within the centres and used up for consciousness, less energy remaining over to work upon allied centres. Thus the wave of disturbance is stilled as it spreads, and so not only should there be less muscular activity, but even the activity of thought itself may be damped to pay the price of a deeper consciousness. To such a conclusion the facts seem at least to point. We look to psycho-physical observation and experiment to make the truth clear.

Some contrasts of character become immediately explicable, as also contrasts in the mood of the same individual. The shifting nature of such contrasts—the modifiability of the extreme types—is no less intelligible. If consciousness corresponds to a transformation of energy in the centres,

<sup>1</sup> It seems to be indubitably a fact that the most reasonable thing under even new circumstances may be done so that we do not know that we do it until it is done. Moreover it is then done more aptly, more swiftly—with less expenditure of time and energy. Here is a test case from my experience, occurring by accident as all valuable test cases in psychology must. One morning, when I was riding a bicycle with confidence through unfrequented streets, a butcher's cart suddenly appeared from a cross street being driven rapidly, as I was riding rapidly, so that we were due to meet at right angles with the utmost precision in the middle of the street. It was quite impossible for either to draw up in time. That is all I knew till the next instant I found myself safely round the corner, and dismounting in a line parallel to the cart which the boy just succeeded in pulling up at that point. I had done exactly the right thing, and to my own considerable astonishment, because I had no idea of the act, and the position was one of which I had never happened to think beforehand. Here then was a highly intelligent action perfectly new, and absolutely unconscious. To persons of a more instinctive type similar experiences may be quite familiar.

the element in attention which conduces to more vivid consciousness is the practice of effecting this transformation ; and the universal result of continuance in practice is towards spontaneity. Much-practised centres will become at last more spontaneously conscious, yielding up their innerness whenever stimulated. Consciousness, like Virtue, can be increased by practice. So also can unconsciousness by the practice of excessive activity.<sup>1</sup>

Definite terms are convenient. Let us therefore distinguish between these two forms of agency—the transformation of energy within the brain-centres and the transference of it by stimulation to other centres—as *æsthesis* and *kinesis* respectively. Both are of account for the processes of mind : the former is what makes it mind, the latter is the vehicle by which mind as sensibility becomes mind as thought. The *æsthesis* of many centres goes to make a thought, but without their *kinesis*, their interaction and therefore their conjoint *æsthesis*, thought would not be possible.

#### CONTRAST OF TYPES.

(1) First and most obvious is the contrast between a mind that is in general characterised by the instinctiveness of its life, and the more slowly-moving, deeply-feeling mind with life proceeding generally out of consciousness. Each has its excellence according to the purpose in hand. The best mind is neither, because it is in due measure both ; can act instinctively under the spur of danger or other necessity ; does act with consciousness when occasion requires. Even a best mind may have its congenital tendency : it may be a deeply-conscious mind, so well controlled that pressure enables it to be instinctive ; or it may be an instinctive mind trained to the prudence of pause and subjective attention. The error of the instinctive is haste : the error of the highly-conscious is actual defect of energy to act or think as in one paralysed by too much feeling.

Who has not suffered from both these errors—from the one in himself, from the other in his acquaintances. Not seldom is one met who has suffered much from the sheer exhaustion of being so vividly conscious of the thing to be done that he has no energy left to do it. Nor is his lot alleviated by the fact that his nearest relative exemplifies constantly the opposite type.

<sup>1</sup> Attention is probably a double fact, and the effect of attention which makes for intelligence is of the nature of activity, and thus probably not favourable to pure sensibility *per se*.

(2) Second, though probably not independent, is the contrast of æsthetic and kinetic in prevalent habits of intellectual life. One is deeply conscious, the other full of intellectual activity. In the first case, ideas are very vivid, swift enough in impression, but slowly formed, and their connexions are much less stable than themselves. The flame of consciousness burns strong and bright, but there is little of the lightning flash from point to point. This is the seeing, hearing, deeply-feeling mind, of perceptions rich in variety and colour, of a musing fullness and intensity of life. Such a one is not *quick* of wit: neither in logic nor in fancy does his intellect show high pace. Nor is he apt at the manifold suggestiveness of thought. An experience is itself to him so vividly that it does not suggest other experiences so much. His thought is deeply conscious, not aptly associative.

And this, whether he be broadly imaginative or not. Breadth of imagination, whether manifested in sound common sense, in far-reaching imagery or in width of thought, would seem to depend on structure of brain, rather than on quality of the centres generally. The æsthetic mind as here conceived may be broad or narrow in its experiences, may be concentrated or expansive, complex or simple, in its momentary states. Its characteristic is apart from these varieties, and consists in the full flush and the correlative unsuggestiveness of each experience.

In the opposite type this characteristic is reversed. The full flush of a deep sensibility is absent, but the experience flows over readily in suggestions: memory, imagination, intelligence play the major part in even those perceptions that lie nearest to the sense. In the extreme type the mental manifestation in all its parts is very thin. Though it echoes so widely—or rather because it does—there is very little body or depth of consciousness in it. Hence ensues an effect of cleverness that yet leaves no impression of weight or wisdom. Associations of thought are swift and accurate along habitual lines, fancy is apt enough, logic sound, but, since the depths of possible consciousness remain untouched, all deeper analogies are missed, and more especially there is a total lack of those deep emotional associations on which depend, though in different ways, the Poetry of Imagination, the Unity of Thought and the Practical Wisdom of Social Life. Just as excessive æsthesia implies the stagnation of thought, so excessive kinesis implies the starvation of feeling, and hence an incapacity for passion and purpose which, amidst much intellectual activity, shows itself as indifference to the Ends of Thought.

Obscure metaphor in literature owes its inaccuracies to imperfect consciousness of the things compared. I think it is a case in point when an eminent thinker speaks of the mind of man as "turning upon the poles of Truth". It would seem that there can be no clear consciousness of anything corresponding to this phrase. Compare the vivid insight that gleams in the untutored similes of the Celtic peasant. "The thought came into my mind quite sudden," said a Kerry man, "just as the sun shines out all at once on the mountain side." Carlyle abounds in striking examples. For one he compares the Reign of Terror to the black spot caused by a well spring which increases the more one tries to stamp it out. Really beautiful metaphor is always of this vivid, deeply-conscious kind, uttered in full sight of the things compared. Failing this, we may admire the great German poet whose peculiar merit is his abstinence from simile, his mind being wholly given to saying, not what the thing is like, but what it is. This characteristic of the poet Goethe argues a depth of æsthetic in him which corresponds also to his interest in the concrete, his dislike of the abstract, and to those indications of intellectual inertia which made him so prone in earlier life to collect material rather than to build. Schiller, less deep, less resonant, had more creative impulse—probably more kinesis, though not therefore in excess. That Goethe was on the whole of the æsthetic type I do not doubt. Perhaps the poet to be a great poet—as also other seers—must lean that way.

He saw through Life and Death, through Good and Ill,  
He saw through his own Soul.  
The marvel of the Everlasting Will  
An open scroll  
Before him lay.

(3) Some differences in memory as between one person and another may be inferred from this divergence of type. Retentiveness is probably a fundamental quality which varies in degree, so that all other things being equal one mind retains its mental impressions longer and with more certainty than another. But the very wide-spread popular notion that defects of memory do argue some defect in the vitality of the original impression at the instant, points to a truth. This vitality as we have seen is of two kinds—the impression may be brilliant or it may be lively. The memory of it, therefore, may naturally be expected to show traces corresponding. And by this it is not merely meant that the revived impressions will reproduce the character of their



originals as brilliant or lively. The conditions also under which revival occurs differ in the two cases.

It seems to be a fact of experience that impressions endure throughout a lifetime with more or less certainty in proportion to their original degree of consciousness. A healthy vigorous person expects this durability of consciousness in himself—whatever has been conscious is in some sense in his mind. The conscious effects are, as it were, more durable. Physical shocks take place in us every day, and we outgrow them. More precisely the life of the organism as determined towards some physical type keeps its way and holds its own and thereby nullifies many minor effects wrought in it from time to time. Unconscious nature "takes no notice" of small distractions.

But a distraction which wakens consciousness works an effect the nature of which is to last through life. We speak of such an effect as entering into the life-experience and think of it as not extinct even when forgotten. We know that, however long past and seemingly completely forgotten, it may turn up again under stress of great excitement or under circumstances peculiarly suited for its revival. Thus there is a peculiar relationship between consciousness and durability.

From this it would seem naturally to follow that impressions are more durable in proportion as they are more vivid. Or, in other words, the more the element of æsthesis preponderates in the reaction on a stimulus the more durable *per se* the consciousness is. We might even say that to be conscious of an impression is to store it. By a deep consciousness to-day I may store an impression which to-morrow, being still present, begins to work in stimulating other reactions. This postponement of mental activity, *i.e.*, kinesis, is indeed a commonly-observed fact. In my experience it clearly goes with great concentration of consciousness. Mental activity for the time is almost non-existent, but the impression lasts with undiminished force till, perhaps days later, it becomes the centre of thought. Whether its vividness is reduced or stimulated by this late-coming activity depends on the nature of the case as determining whether the circles of thought move simply from it or return to it with fresh stimulus. I have noticed that the effect of much practice in immediacy of action, as when decisions have to be frequently and swiftly made, is to diminish the æsthetic factor in experiences generally in proportion as the opposite habit becomes easier.

It would, however, be premature to decide that the æsthetic

type has all the advantages in the way of memory. Totals of experiences that have subsided into the subconscious state are recovered by the stimulus due to new impressions which are partly identical with them. There is an element in the new impression which has occurred before, and this element by its kinesis restimulates the other elements of the old impression, hence reinstating it as a whole. Thus the reinstatement of the old turns upon (1) the implicit analysis and (2) the kinesis of the new. The latter fact it is that interests us here, since it points to the conclusion that the kinetic type of mind is favourable to memory under its other name of *recollection*. The æsthetic type stores more securely; the kinetic type recollects what is stored with more ease.

Since the ordinary play of memory consists in bringing back impressions that had passed out of consciousness for a time, it might seem now that the kinetic type has the advantage in the ordinary operations of memory, although more liable to oblivescence than its contrast. Before deciding this point completely, however, we must inquire whether the process of recollection by the association of old with new is the only process by which the old is revived. Is there, besides, a process of spontaneous revival?

It is difficult to deal experimentally, or even in the experimental spirit, with such a question as this. There is no doubt that memory occurs through the association of ideas: we all observe this every day. Here, therefore, is a cause by which we seek to explain all the cases that occur: and no room is left for the hypothesis of spontaneous revival unless we find cases which cannot be thus explained. Now it is very difficult to be sure that associations, more or less obscure, have been absent in a case of apparently spontaneous memory. Sometimes the associations are very obscure, as we know by our failure to discover them at first, though we do find them in the end with certainty.

Nevertheless we must not conclude too hastily. Sometimes we do find ourselves with a memory whose genesis at that moment we cannot account for, and it is noticeable that such memories are marked by vivid æsthesia in their originals. Scenes that have impressed me very much, such as the dawn on Monte Rosa seen from the opposite slopes, or the Atlantic colours on the Irish west coast, seem to keep a perpetual existence so near the threshold of consciousness that they have a continual tendency to rise above it of their own accord, and do so in many fresh and vivid moments. It should be noted that there is a sense in which any present

moment may recall by association any moment past, since both have this element in common—my personal consciousness of self. And certainly those apparently spontaneous memories do very often go with present moments that in some way or other make me vividly self-conscious. They may appear then as part of my life history when my thoughts turn to it. Their exceptional vividness in the first instance would tend towards their annexation to this content.

The best examples that occur to me are certain experiences of brilliant scenic colouring which come into my mind at odd moments, apparently from nowhere—a scene near Loch Vennachar after rain, and an unusual bit of fine sea-colour off the rocks near Filey, besides others already mentioned. I am sure I have seen finer examples of colour than these, but they happened to produce a very vivid consciousness at the time, and have, I think, for that reason become representative to me of a stage of development in my æsthetic perceptions. They are part of my history, and thus associated with each point of my history as it occurs.

This suggests the further reflexion that the work of consciousness as a ground for persistence in the effects of stimuli might be regarded as turning these effects into a life history, *i.e.* giving them that form of inherence in one person's experience, from which it follows that each is revivable by association when in any new event the mind concentrates on the fact of that person as experiencing it, provided that this kind of concentration was present in the former event.

To the fulfilment of both these conditions the æsthetic type lends itself by its vivid penetrative consciousness. What may be loosely described as the play of spontaneous impartial memory should belong *par excellence* to it, even if there is no spontaneous memory strictly so called. If, however, there is such spontaneity—and we cannot exclude, even though we may not assert, this hypothesis—it would seem probable that a consciousness vivid in the first instance would sink more slowly towards the level where it ceases to be easily revivable.

Thus our two types yield two kinds of excellence in memory. The æsthetic excellence is endurance, certainty, a fulness of detail and concrete sanity of flavour, combined with a spontaneity which is at once delightfully brilliant and erratically irrelevant. "Have I a good memory?" said an eminent divine to me in answer to the question. "My memory is a great deal too good for my purpose. I remember everything, doggerel rhymes, the order of the boats on the

river, the shop windows, the last number of *Punch*, and they pour themselves out on my unhappy mind—these things—when I am preaching a sermon, or otherwise seriously engaged.” This kind of memory might be called subjective, following the hint that its associations are rooted in personality.

The kinetic excellence, on the other hand, is an orderly memory essentially objective, in which images are recalled with the emphasis on their associations, and in which lack of brilliance is compensated by liveliness. There will be varieties in such memory according to the predominant habit of thought, but it will always be relevant to some issue great or small. Whatever the dominant habit may be, the memory takes place through similarity always. Variety between persons arises in that preliminary part of the process which has been barely mentioned, the analytic attention which deepens consciousness to association-point on one element of the new experience rather than another. Of this variety there is not time to speak now.

In concluding the treatment of this subject one further suggestion remains to be made, though in a tentative spirit only. If consciousness corresponds to a particular kind of concentration and transformation of energy, with the effect of making the particular disturbance at one with all other disturbances of the same kind that has taken place in the individual life history, the extent of this transformation of energy does doubtless affect the form of the further disturbances following on it. The deeper consciousness probably initiates a wider spread activity reaching physiologically it may be to parts of the brain left free from the regular play of the superficial kinesis—parts which may be conceived as reverberating freely, not being devoted to particular sensory or motor functions as the other parts are. That there are such parts corresponding to the frontal lobes of the brain seems probable from physiological research. The suggestion here made is that when consciousness as such is intense these are more stimulated, and thus act as *organs of reinforcement to consciousness more particularly*, being not mapped out for any special processes of thought. This suggestion is consistent with the well-known observation that their development in man goes with mental power and also with the fact that their loss in animals is followed by a general enfeeblement and not by any particular loss of motor function.

If this be a view of the matter conforming to truth, the æsthetic type of mind compensates for the thinness of its

first reaction by its power of stimulating secondary reactions of reinforcement later. This with its greater ability to store impressions that may, as stored, become the centres of activity postponed till a convenient season, constitute a kind of talent not less useful than that of the more practical, swiftly-thinking, lightly conscious man.

### III.—VITALISM: A BRIEF HISTORICAL AND CRITICAL REVIEW (II.).

BY DR. CHARLES S. MYERS.

#### A CRITICISM OF VITALISTIC THEORIES.

A TRULY scientific theory has been usefully defined as the condensed expression of perceptual knowledge in conceptual formulæ. Terms like Atom, Molecule and Ether are not perceptual. Could they even be shown to exist, could molecules one day be felt, seen and weighed, inquiries would be merely transferred a step farther back and the argument continued in terms of molecular instead of molar experience. They are pure conceptions based on the evidence of the senses. Scientific theories may be thus regarded as a shorthand in which the entire phenomenal world is expressed (15). Whence it follows that a just appreciation of any particular theory can only be made, by considering it—just as an event of history would be considered—in the atmosphere wherein it flourished, by calculating the extent of knowledge whereof it was the mere summary, and by estimating the worth of such current theories as it had to oppose. Accordingly the following pages will be devoted to the criticism of modern vitalistic theories (which really contain within them all the essentials of earlier speculation), while the more detailed consideration of older theories will be deferred until another opportunity offers itself.

It may here be considered why the riddle which Life offers Sphinx-like to mankind has been in turn attacked, now by Metaphysic, now by Natural Science, in the vain hope of a successful solution. For it is not without reason that two such apparently opposite methods have been brought to bear on one and the same perplexity, and that consequently the language and thought of each have been influenced by the other.

At the dawn of the objective method, when the resolution of complex phenomena into simpler constituents was commencing, an inquiry into the nature of movement proved

the first stepping-stone to bear the philosophic mind across to subjective contemplation. "I have a feeling of resistance," reasoned the primitive physicist, "when a moving object meets my body. This must be the cause of motion; for, when this resistance or 'force' is communicated to my body, the object loses its power of movement." Thus force, purely conceptual in its origin, became falsely endowed with all the qualities of a visible tangible substance, and, even so late as Schelling, was considered the material cause, instead of a sensory effect or equivalent of movement. The term 'cause' came also to be employed in another connexion—as identifying the last link that completes a chain of events and renders possible a familiar and hence an apparently simple phenomenon. Both uses of the word, have led to the same result—the pursuit of the Ultimate Cause of Things, τὰ πρῶτα καὶ αἰτία, wherein the human mind has called in the Why of Metaphysic to supplement the unsatisfying How of Natural Science.

Natural Science can never offer more than a description of things. "Science," says Claude Bernard, "never ascends to first causes: and like that of all others, the first cause of life escapes us." Even the theory of evolution, which in its early days was regarded as the panacea of all ignorance, turns out to be a mere demonstration of the manner and not of the cause of working nature. So, too, while Kant's assertion that even a second Newton could never reveal how a blade of grass grows is likely some day to be disproved, the task of determining why it grew must remain ever outside the limits of Natural Science.

Not only for this purpose has Metaphysic been invoked, but also for the purpose of explaining the nature of Mind. Psychologists have complained that Mind can no more pronounce on its own nature than a ray of light can see itself or a wave of sound can hear itself (16); and that, after every link in a given chain of molecular disturbances within the brain-cortex has been laid bare, not the slightest advance will have been made towards an interpretation of the thought or sensation which accompanied those disturbances. The position assumed by such writers and their teaching of the independence of objective and subjective psychology (*i.e.* of neurosis and psychosis) appear to arise from an insufficient consideration of the nature of all natural knowledge. It is true that the states of consciousness during any process of psychosis are widely different from the states of consciousness by which are expressed the neuroses or the elements of that psychosis. But so, too, do the states



of consciousness derived from a falling body differ from those arising from an equivalent amount of heat. In the physical world the states of consciousness derived from heat, light, electricity and magnetism are commonly expressed in those derived from matter and motion. The same aim directs the attempts of psychology to give a like rendering to the states of consciousness derived from psychic activity. To posit several forms of activity in terms of one other form is to describe, not to give an ultimate explanation. To do this and to determine the relation between such various forms of activity are the sole aims of Natural Science.

By similar arguments may be met the complaint of the vitalist that after the properties of life have been described in terms of matter and motion—after the entire phenomenal world has been expressed in vast mathematical equations—no nearer approach will have been made by Natural Science to a solution of the world-riddle (17).

It will be interesting briefly to consider in this place a few of the attempts which have been made to span the gulf between ultimate and scientific explanation. Here as everywhere the human intellect has shown its eagerness to buckle on the brilliant wings of speculation and to soar, heedless and unrestrained, beyond the restraining power of experiment and observation; until, Icarus-like, it is compelled to descend to its proper level before the fierce glare of logic and verification. Various ages have seen sporadic attempts to combine under one comprehensive system the contradictions of materialism and spiritualism. Emanating from Maupertius and Robinet, and elaborated within recent years by Clifford, v. Nägeli, Carus and others, these efforts have culminated in a Monism, which essentially teaches that all matter is endowed to a varying degree with mind and that matter and mind are the two sides of some one thing, unknown and unknowable (18, 19). A similar conception has been applied to the nature of life itself. It has been urged either that inert matter is animated with something "which is not life but which may develop into life," or, as Glisson once said, "*Materiam non esse tantum naturæ vitalis capacem sed et actu vivam*".

The absurdity of the view that an inherent vitality is spread through the universe becomes sufficiently evident, if "life" be for the moment viewed objectively as a group of definite sense-impressions. With equal reason might the elements of the smell of ammonia be accorded to a mixture of nitrogen and hydrogen, although it is clear that neither of the constituents of ammonia can contain in itself that

altered molecular vibration, which arises from chemical union and is held to produce the characteristic odour of the compound. Similarly, the phenomena of life, as revealed to consciousness by certain movements inherent in peculiar atomic combinations, cannot justifiably be extended to include the latent half-developed properties of matter in general.

In point of fact the word "life" tacitly conveys a far wider signification here than it avowedly asserts; the objective is forsaken for the subjective standpoint. Surveying the working of the universe, observing the evolution of individual and of race, recognising nature's attempts at repair and the marvellous compensating mechanisms of disease—man has not hesitated from the first dawn of knowledge to declare that there is something in the universe far greater and nobler than matter and motion. Reading the consciousness of his own actions into the antecedents of phenomena of the external world, he has imagined a universal Will in nature and above all a principle of Design. Just as he has at one time assigned "mentality" in some form to the humblest atom upon earth, so at another time Man has invested with similar powers the subject of the loftiest conception which is possible to him. Pantheism and monotheism rest on the same psychological basis. The sensations of the effort of Innervation and of Will seem to man the source of all energy; and when he finds himself surrounded by a universe whose parts fit together with an accuracy surpassing that of human skill, he must needs infer the working of an intellect of preternatural prudence and strength.

This course of subjective reasoning naturally became extended to the phenomena of life itself. To those who could find no room for the application of a hypermechanical force, whether spiritual or material, there still remained the conception of vital principle as a directive agency (20), perhaps as an "engine-driver who does not draw the train himself but by means of certain valves directs the course of the steam so as to drive the engine" (21), or as an "antecedent cause" which "controls or directs or governs the forces of matter . . . and is separable from the matter with which it is temporarily associated" (14).

It has been already indicated that the popular notion of cause has no authorised *locus standi* in Natural Science. The sole method of Natural Science is integration. In terms of space and time as afforded by visual and tactile sensations—in the common language of movement—she endeavours to

express the entire phenomenal world. It would seem indeed that the various activities manifested in heat, electricity, magnetism, etc., which various sensations differently interpret, are capable of being described in terms of each other; and analogy naturally would extend this process of correlation to vital phenomena themselves. At present, however, various considerations can still be brought forward to make at least a temporary retention of the word "vital" desirable.

With some show of truth the vitalist may maintain that if the physicist erects an atomic structure wherein are embodied various properties of matter, he himself has the same right to endow an equally chimerical special principle with the manifold characters of life. Without doubt he has this right, as indeed the chemist may legitimately extend it so as to speak of an aqueous principle in water or of a calcareous principle in chalk, if the figure of speech may be of service to him. That Natural Science does not object to the employment of the concept for *descriptive* purposes is sufficiently demonstrated in the case of the principle of "nascent action" which, for a long time accepted as underlying many unusual chemical actions, has at length been replaced by an extension of mechanical terminology.

Physiologists have often availed themselves of this licence. Following the custom of physicists in their use of the term "force" as a convenient mathematical abstraction, they attribute to certain phenomena vital force, vital energy or vital action, where physical and chemical forces, energies or actions are as yet inadequately discovered (22). In this sense all varieties of so-called automatic activity have been ascribed to the energy of the vital principle. Similarly, certain observers have distinguished physiological (*i.e.* vital) from physical osmotic action within the intestine. Other observers, again, have insisted on the vital nature of the process of gaseous change within the lungs. And there are many further examples. But throughout, this usage of the term "vital" merely implies that the phenomena in question are each the expression of an appropriate system of forces which, even if it be nothing more than a complex composition of ordinary mechanical forces, yet represents activities apparently so different from lifeless movements that it seems at present desirable to reserve for the force some special epithet.

On the other hand, there have not been wanting those who are ready to exceed this privilege. Vainly confident that the mere invocation of a special force or principle can explain the obscurest of natural phenomena, many physiolo-

gists have only been too eager to console themselves with the working of a *vis* or *ens vitalis*, where failure had otherwise stared them in the face. Instead of endeavouring to improve the sensitiveness and the accuracy of their instruments or to reduce the complexity of experimental conditions, they have chosen the easier course of attributing all their troubles to the action of some force which lies confessedly far beyond their comprehension. Year by year this practice has continued unchanged, although year by year the intrusion of mechanism into physiology becomes increasingly evident. Perhaps of all phenomena, formerly deemed "vital" and now described in physical language, ferment-action is the most striking. (This will receive closer examination almost immediately.) Another example, where similar but less marked progress has been made, is the process of absorption. For it seems fairly evident, much as has yet to be learnt concerning the rates and general nature of osmosis and dialysis, that Heidenhain's "physiological osmotic action" is a process of a mixed quasi-chemical and physical nature and, in this respect only, differs from the purely "physical osmotic action". The state of continued chemical instability of the living substance, whereby the composition of the living membrane and the consequent osmotic changes are never constant for two successive moments; the influence of metabolic processes on the composition of the fluid transferred, so that large quantities of a given substance may conceivably be built up into more complex bodies and afterwards reduced to their former simplicity on the other side of the living membrane;—all these and similar obscure factors are likely in the near future to be determined. Meanwhile certain writers, bearing in mind that osmosis and filtration as at present understood are incapable of offering a satisfactory explanation of the phenomena in question, are justified in describing these processes as being in a sense the servants rather than the masters of protoplasmic activity (23). It cannot be too strongly insisted, however, that "everything is specific which we cannot explain, and dynamic is the explanation of all which we do not understand: the terms having been invented merely for the purpose of concealing ignorance by the application of learned epithets".<sup>1</sup>

Physiologists have long been acquainted with a class of substances which appear to be endowed (under suitable conditions) with almost unwearying chemical activity; and,

<sup>1</sup> Surely these words of Justus v. Liebig compel the famous chemist and vitalist to be hoist with his own petard.

owing to the fact that they occur in inappreciable quantity, are recognisable only by their effect. Like protoplasm, they have never been synthetically prepared, nor have they been isolated in a pure state. To bodies of this class have been given the name of ferments or enzymes.<sup>1</sup> The recent researches of Emil Fischer (24) and others on ferment-action have brought to light many curious details of the process. It has been found, for instance, that one ferment will completely convert a given glucoside into sugar, while another ferment will only convert it in part; and on the other hand, that one of two bodies having the same molecular composition but slightly different molecular configurations will be zymolised by a given ferment, which will leave the other body untouched.<sup>2</sup> Fischer was led to consider this apparently selective ability on the part of enzymes during his laborious investigations into the synthesis of the sugars. Availing himself of the past work of Le Bel and van't Hoff on the relation between optical activity and the asymmetry of intramolecular carbon-atoms, Fischer sought to establish the direct dependence of (hydrolytic) ferment-action upon molecular configuration. He showed how it was possible for optically active bodies to combine with other simpler substances and to build up still more complex optically active bodies. He demonstrated the profound influence on zymolysis exerted by racemism or other optical modifications, and finally he concluded that the same definite relation must subsist between the molecule of glucoside and the molecule of ferment, which obtains between a lock and its key. The door of chemical reaction can only be opened when the two molecules fit thus accurately together. At that moment molecules of still greater size are formed, until finally, aided by the reaction of the external medium and the simultaneous addition of the elements of water, they break down into the original enzyme-molecules and the products of the ferment-action.

A similar train of thought appears likely to throw considerable light on the mode of growth of living substance.<sup>3</sup>

<sup>1</sup> Of the two kinds of ferment, organised and unorganised, only the latter is dealt with throughout this article. It is fast becoming recognised that the action of so-called organised ferments has a twofold character, resulting partly from direct metabolic (excretory) changes within the organism and partly from the influence of secreted unorganised ferments.

<sup>2</sup> Zymolysis is the action of a ferment or enzyme. Glucosides are substances yielding sugars by the action of alkalies, acids or enzymes.

<sup>3</sup> In this connexion I gladly acknowledge my obligations to Dr. Ruhemann of Cambridge. Since the above was written, further chemical speculations and discussions have appeared, which necessarily find no mention here.

Given a protoplasmic molecule whose huge unstable structure contains numerous asymmetric carbon-atoms, this molecule may conceivably be ever adding to itself from the external media and be forming a still more complex and unstable molecule, *pari passu* with the increasing number of asymmetric atoms. At length, however, division of the molecule must come about, and two new molecules are formed; that is to say, the protoplasm has undergone metabolism. The nature of the intra-molecular division will be largely determined by external conditions; in other words, living substance necessarily adapts itself to its environment.

Unfortunately the present state of physiological chemistry is too feeble to sustain so fascinating a hypothesis. Hitherto the chemical examination of protoplasm has signally failed. All that has been studied is a collection of substances of various complexity, yielded by the breaking down of protoplasm. It is now well known that the chemistry of dead matter is very different from that of living matter, and the reason once preferred by Müller for the introduction of a vital principle (p. 24) is no longer adequate. Moreover, the synthesis of urea by Wöhler in 1828 and the subsequent researches of Liebig and his successors have completely overthrown the old idea of "organic" chemistry. It is perhaps not going too far to expect in the near future a synthesis of albumen, and in this connexion it is suggestive that optically-active sugars have been prepared from the reduction of certain proteids. Yet hitherto the chemistry of living substance itself remains untouched. "Protoplasm" is a word devoid of chemical significance, useful, like its daughter term "Enzyme," to connote certain obscure reactions rather than to denote any definite substance.<sup>1</sup>

The physical constitution of protoplasm is as little known as the chemical. By some, *e.g.*, W. Fleming, it has been called a feltwork; by others, *e.g.*, Fr. Leydig, a sponge-work. O Bütschli (25), from his researches into the protoplasmic-like movements of delicately foaming emulsions of olive-oil, has concluded that protoplasm has a lamellar honeycomb-structure. The granula theory of Altmann, partly descriptive, partly hypothetical, bridges across the gulf that divides the above microscopically-derived contentions from such purely imaginary creations as the micellæ of Nägeli, the tagmata of Pfeiffer, the bioplasts of Pflüger, pangenæ of De Vries, the

<sup>1</sup> Recent experiments on the wonderful resistance of seeds to extraordinarily low temperatures can surely only be interpreted by the supposition that a wide difference exists between the chemistry of a seed and that of its seedling.

gemmules of Darwin, or the ids and idents of Weismann. The efforts to attribute vital properties to microscopic intracellular particles result in a very close imitation of van Helmont's theory, a *reductio ad absurdum* sufficiently obvious. Every particle, every cell, every tissue, every organ, nay, also the whole organism, each must have its appropriate vital force or system of vital forces. Such a difficulty will be avoided if it be remembered that life is the result of the interaction of various substances, and hence is capable of existence only in relatively large quantities of matter (26).

The following considerations make it sufficiently obvious that protoplasm has by no means universal characters. The life of a plant is very different from that of an animal; and, as plant and animal may develop under similar external circumstances, the differences in metabolism and in general activity must reside in protoplasm itself. The egg of a fowl cannot be made to develop into a horse. Temperament and constitution in one man are not the same as in his neighbour. Clearly the characters of living organisms are very various, and presumably they are associated with corresponding differences in the chemical constitution and composition of the substance of those organisms. It is at the same time to be remembered that profoundly different results may be obtained by subjecting one and the same protoplasm to different external forces. A given bud may be made to develop at will into a vegetative or a floral shoot or into a thorn, while a dioecious plant has apparently been made to develop a preponderance of male or female flowers. A similar influence of external conditions on growth is again shown in the case of lateral shoots, the growth of which is clearly correlated with the degree of development of the axial bud. All these phenomena receive the same definite explanation at Weismann's hands. However, the recent researches of Oscar Hertwig (27) in experimental embryology, if accepted, show that Weismann's theory of determinants must be modified. To account for the "isotropy" of protoplasm, either every cell of a developing vertebrate-ovum must (until the formation of the notochord) be credited with sufficient ids to produce any organ of the mature body; or Hertwig's theory must be adopted that development and evolution result not only from the nature of the germinal material, but from the moulding influence of growth, and from the relation of cells to their external and internal environment. The following experiment which demonstrates the educational capacity of protoplasm is suggestive. If transferred by easy and gradual stages from a normal to a fairly strong poisonous fluid,



protoplasm may be made to grow and to continue its usual functions amidst conditions, which would have killed it had it been ruthlessly plunged from the normal into this toxic medium. Evidently the chemical constitution of the protoplasmic molecule is thereby changed; the living substance may be said to have been educated to act in a strange environment. The persistent application of such abnormal stresses from without might conceivably bring about a permanent change in the chemical composition of protoplasm, thereby giving rise to different individuals or even to different species. It is, however, impossible to demonstrate the permanent modification of the protoplasm of any metazoon by a new constant stress from without, and hence an expression of the phenomena of heredity, evolution and development in such simple physical language falls to the ground. On the other hand, development has too long been ascribed to the effects of a closed internal system, independent of all external influence; while qualities, admittedly complex, have been retained in an invisible world of *ids* and determinants. Only by attributing the various changes of the embryonic and adult life to the interaction of external and internal conditions, will further experiments be prompted to settle such disputed questions as the influence of external conditions on the determination of sex, function and monstrosities.

This brief mention of Weismann's theory here in connexion with the difficulties of a mechanical description of vital phenomena would have little to recommend itself, were it not for the great moral the theory carries with it. The principle of the non-transmission of acquired characters, which, however incomplete, still remains unassailed by direct experiment, was directly deduced by Weismann from his inductively formed theory of heredity. Indeed so many are the discoveries, so numerous the researches which have been called forth by its aid that, even when rejected, this theory is destined to an immortal place in the annals of Natural Science. Concerning the nature of life, as concerning the nature of heredity, it is the imperative duty of the biologist to brush from his eyes the veil of hopeless pessimism, to look carefully and impartially on all sides of him, to frame the best theory which knowledge thus acquired permits him, and to test the truth of his theory by such experiments as it suggests.

The conception of life as a special form of activity, has been discussed in the light of two alternatives. Either this activity is the expression of mechanical forces which, to use Virchow's words, "act under most extraordinary and varied

conditions, wherein the final effects are separated from the original causes by so many intermediate links that their connexion is not easily established". Or else, this activity is something absolutely *sui generis*, meriting the dignity of the same isolation which distinguished electric or magnetic force a century ago. History shows how "as philosophy advances, life or activity in natural objects retires, and leaves them dead and inactive. Instead of moving voluntarily, we find them to be moved necessarily: instead of acting, we find them to be acted upon: and Nature appears as one great machine, where one wheel is turned by another, and that by a third: and how far this necessary succession may reach, the philosopher does not know" (28). Surely, then, he will hesitate before denying to vital phenomena the extension of that unifying process which all progress bespeaks.

The two sides of the same problem stand clearly displayed. On the one hand, Natural Science offers but a description of phenomena in arbitrarily-selected language. On the other hand, the human mind, dissatisfied with these narrow limits, tends always to exchange mechanism for a teleology where verification from experiment is no longer possible. Pursued objectively, causality seeks the relation between phenomena. Pursued subjectively, it concerns the origin of phenomena.

From the universal standpoint of Natural Science, attention has been directed to the interaction of external and internal conditions during development; to the impossibility of a present description of growth, adaptation and heredity in mechanical language; and to the lack of knowledge concerning the composition and structure of living substance. And it has been shown how necessary to the physiologist is the retention of the expression "vital force"; whether by it be understood the resultant of ordinary physical forces of which he knows little, or something (distinct from and opposed to these forces) of which he knows nothing. Regarding the most recent rapid extension of knowledge in physics, a third meaning, more probable than either of the two former, may be entertained; vital principle being held to express a combination of definite complex forces, which are mechanical in so far as they depend on phenomena that differ only in degree and not in kind from those of lifeless nature, which are vital in so far as they result from the activity of a substance, the conditions for the manufacture of which are quite unknown in the laboratory. In this way, neither mechanism nor vitalism, as now understood, can be proffered as the scientific theory of the future. The greater becomes the knowledge of the living and lifeless worlds, the

more each doctrine must borrow from the other, until this unifying process has become so complete as to make it impossible to decide whether a mechanical or vitalistic description is in force.

Also from the individual standpoint of the Inquirer, the necessity for the retention of the expression "vital principle" is no less obvious. Although objectively he may deny to consciousness the existence of some inner connexion, marked by necessity and universality (29, 30), and may describe the distinction of Self and Not-self in terms of an ever-running stream of sensations amid "the perpetual flux of nature," yet ultimately his purely subjective standpoint must force him to the recognition of the Ego. The subject is far too vast and intricate to find treatment here. It has been fully elaborated by Ward, who thus summarises the argument: "If a series of feelings is what is known or presented, then what knows, or what is presented to, cannot be that series of feelings." (31). This line of reason must be generally applicable to the sentient world, if the gradual evolution of consciousness be not denied. And to the question, *καὶ τί ποτ' ἐστὶ τὸ ἐναποιοῦν*; the reply must surely be—something not undeserving of the expression, "vital principle".

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(Conclusion.)

#### IV.—THE ABSOLUTE OF HEGELIANISM.

By A. K. ROGRES.

AMONG the adherents of that school which in a rough way may be termed the Hegelian school there are, as is well known, two pretty distinct tendencies represented. I suppose that these tendencies may be traced respectively to the Kantian and to the Hegelian strain in the general method of thought which the school stands for. On the one hand, the emphasis is placed upon the comprehensive unity of knowledge with which reality is identified. The individual, and, indeed, the race, fall into the background as compared with this complete and eternal fact of existence, which human knowledge only reproduces very imperfectly. As opposed to this static conception, which of course is represented in its more orthodox form by Green and his immediate followers, and, more independently, by such writers as Bradley, Royce and McTaggart, the other, or Hegelian strain, lays emphasis on the nature of thought or experience as a living and developing organism. Here the actual facts of growth in human experience as such are very much in evidence, and far from being a comparatively meaningless set of approximations to a reality which already exists complete in itself, are the very stuff from which reality is made; indeed, no definition can be given of a reality except as it is placed in this ever-widening process of growth.<sup>1</sup> I shall, for my present purpose, be content with assuming that the more recent Hegelians are right in defining reality as a process, rather than a timeless content of knowledge; what I wish to consider is the relation of the concept of God to this process of reality, and the grounds on which the Hegelian considers himself justified in discarding an ultimate self *distinct* from human selves, and in defining God as merely the process of reality itself which finds its whole expression

<sup>1</sup> See McTaggart, *Hegelian Dialectic*, p. 7: "Reality itself is not a process, but a stable and timeless state"; and *cf.* with this Wallace, *MIND*, vol. v., p. 551: "The Absolute is at least life, at least Ego, and if these are not process . . . it is difficult to see where we are to look for examples of process".

in finite lives. Granting that ultimate existence is somehow a process which presents itself to us as, in appearance, a system of interrelated lives, is it possible to call this a process of "experience" and to form a distinct conception of it which shall dispense with a self-conscious personality distinct from human life, on which human life depends?

It may be asked, in the first place, whether or not, on the Hegelian theory, this ultimate process which includes human selves is also to be regarded as a single conscious self. This question is for the most part not very clearly answered. On the one hand, the close connexion with earlier Hegelianism, between which and the newer form of the theory there is usually but little distinction drawn, points to this conception of God. This is most clearly exemplified in the case of Prof. Caird, who serves in a way as a transition between the two types of interpretation, and who combines both strains in his results, without apparently feeling the need of reconciling them. At one time he seems frankly to recognise that reality is a process, and to base his argument upon the recognition. It is in this way that he finds the reconciliation of subject and object. Consciousness "goes out of itself to objects in order through them to realise its unity with itself. The judgments by which we determine objects are steps in the *synthetic process* by which we *finally reach* the judgment of self-consciousness."<sup>1</sup> "The return upon self in self-consciousness is a *positive movement* by which the consciousness of objects is completed."<sup>2</sup> "Nature comes to self-consciousness in man."<sup>3</sup> "The dawn of consciousness in which the external object first comes into existence for us as opposed to the self, is at the same time the beginning of the *process* by which its externality is overcome."<sup>4</sup> "If it begins by opposing the world to itself, its next movement is to retract the opposition, to find itself therein. Consciousness, through the mediation of externality, realises itself, or becomes self-consciousness."<sup>5</sup> "A principle of unity . . . which finds its complete expression only in the relation of the *process* of nature to the self-consciousness which is developed in man."<sup>6</sup> "What from one point of view is the process whereby we become conscious of a self in opposition to objects, is from another point of view the *process* whereby the principle of their existence is disclosed, the process whereby, we might even say, they become conscious of themselves in us."<sup>7</sup> It

<sup>1</sup> *Kant*, vol. i., p. 412.

<sup>2</sup> *Ibid.*, p. 619.

<sup>3</sup> *Lit. and Phil.*, vol. ii., p. 403.

<sup>4</sup> *Ibid.*, p. 472.

<sup>5</sup> *Spinoza*, p. 311.

<sup>6</sup> *Kant*, vol. i., p. 77.

<sup>7</sup> *Ibid.*, p. 263; cf. also pp. 23, 119, 616.

seems to me that here we have a peculiarly obvious instance of the way in which God is confused with human life; by identifying the distinction of the self and the world, with the distinction of consciousness and self-consciousness, perception and conception,<sup>1</sup> the process by which we turn our objective experience into an instrument that ministers to our own growth, gradually discovering that the world which at first comes to us as foreign has in reality its spiritual value, is transformed, apparently without any hesitation, into the process by which the world that existed before human life appeared gradually comes to consciousness of itself in man.<sup>2</sup> It is not necessary to dwell upon this, however; the main thing is that, however taken, Prof. Caird's words are meaningless except as referring to a real process. But then again he says: "Our conscious life is a realisation in us of perfect intelligence, *i.e.*, of an intelligence which knows all that as self-conscious subjects we have the possibility of knowing, and therefore is all that we can become"; we have, that is, the realisation of an intelligence which is already realised, "for which the process of development is completed".<sup>3</sup> How this is compatible with a process in any sense I am unable to see. If in truth this principle of progressive realisation by first externalising the object applies not only to human intelligence but to intelligence everywhere,<sup>4</sup> then God is not eternally realised; and if he is so realised, then he must lie outside human experience, which *is* a growth: both things cannot be true of him at the same time. But now the more this static conception drops into the background the more the tendency shows itself to ignore the term self as a description of the Absolute and to fall back on an impersonal process of experience, or consciousness, or life, within which the self is apparently a subordinate category.<sup>5</sup>

Now the truth of Hegel's contention I take to be this: The course of human history is a revelation of God, and a real expression of God's life. It is no mere concession to finite weakness, whose end is a *knowledge* on the part of men of what already exists eternally, but the course of history reveals God actually at work; and except as he is at work, God does not exist. But there are at least three ways in

<sup>1</sup> Cf. *Kant*, vol. ii., p. 122, and *Lit. and Phil.*, vol. ii., p. 518.

<sup>2</sup> Cf. the first, second, fourth and fifth quotations above, with the third, sixth and seventh. See also *Kant*, vol. i., p. 423, and *Evol. of Religion*, vol. ii., p. 77: "The whole process of nature is summed up in him. In him the natural world comes to self-consciousness."

<sup>3</sup> *Kant*, vol. i., p. 423. Cf. *Lit. and Phil.*, vol. ii., p. 447.

<sup>4</sup> Spinoza, p. 311.

<sup>5</sup> Cf. Wallace, *Logic of Hegel*, p. 35.

which this might be taken. It might mean that God, reality, has no existence outside the process of human development, and that the growth of the human spirit is literally and absolutely the growth of God's consciousness of himself. At the other extreme, we might hold that, essentially as my life has its content in its relations to other lives in the universe, at the same time that it is unitary and self-contained in point of existence, so God has a unity of consciousness which opposes itself to human selves, at the same time that the relations in which these human selves stand to his life enter into its content. History thus reveals in very truth the life of God, but not that life in its entirety. In this way we do not identify God with man, and we have no difficulty in thinking his existence through eternity and before the human race appeared. This is the position which I myself shall adopt. Or we might try to steer a middle course between these two, and while we deny to God a separate personality, might yet grant that his life is not exhausted in *human* development.

This latter theory is hardly intelligible except on one assumption—at least, if it is, its upholders may fairly be called upon to show it. It would be possible, I suppose, to look for the surplus of God's life in other finite selves apart from mankind, but except for this expedient the way in which a surplus could exist is not clear. A physical fact, on the basis of Hegelianism, has no medium of existence except in conscious experience, and experience which does not take the form of a self we know nothing about.<sup>1</sup> If, therefore, we set up any reality before human beings existed, it must be a conscious experience, and, as such, a self-conscious unity which, from the standpoint I adopt in looking at it in its previous existence, into which human life does not yet enter, is at least as distinct from my self as I am from my neighbour. And if a reality, appearing to us as nature, existed before the period of human life, then it is quite arbitrary to deny the existence of nature now beyond its appearance in human experience; and consequently, unless we adopt Mr. Bradley's Pan-mixism, we have a fact of reality distinct from human lives, and forming the same sort of conscious unity which they form, and which we call a self. And as it would be impossible to deny the dependence in some sense of our lives upon this original unity, we should come back to the second of the alternatives I have mentioned. Now Hegelianism seems, at least, to deny the

<sup>1</sup> Cf. Dewey, *MIND*, vol. xii., p. 88.



independent reality of nature in any sense. Logically, therefore, the Hegelian can only interpret nature by the function it has in human development, and it must itself grow up in the process by which man comes to know it. We are therefore met by this dilemma : If reality is human growth, then it is impossible to say what we mean by the apparently necessary demand of science and common sense alike, for some reality preceding, in the line of evolution, the appearance of the human race—a difficulty which Hegelianism has never to my knowledge fairly set itself to meet. If, on the contrary, such a reality did exist, then it cannot be made intelligible except as a conscious life, which thus forms, so long as we use the language of common sense, a unity of experience distinct from what we call ourselves. Any attempt, therefore, to gain the favour of common sense by using language like Prof. Caird's, which seems to imply that we can understand, by reference to "experience," the evolution of the real universe in the scientific sense, without at the same time distinguishing<sup>1</sup> between this and the development of human lives, is fundamentally obscure.

We are led, then, to the other conception of reality as constituted, frankly, by *human* growth. Now this is the apparent goal of the more recent tendency in Hegelianism. Reality is growth in experience.<sup>2</sup> It is experience as we actually know it developing in time.<sup>3</sup> We are not to conceive of any such thing as an independent universal mind.<sup>4</sup> The universe is a thinking process which realises itself, for us, only in human consciousness.<sup>5</sup> What we call the object is something that actually grows with the consciousness or

<sup>1</sup> If the Absolute is really a growing intelligence *like ours* his coming to a consciousness of the world would at least not take the form of a *multitude* of human lives.

<sup>2</sup> "Ultimately the growth of experience must consist in the development out of itself by intelligence of its own implicit ideal content upon occasion of the solicitation of sensation," Dewey, *MIND*, vol. xii., p. 396.

<sup>3</sup> "What exists is a series of mental operations, activities of reality, as manifested in the subject who thinks, and in the conditions, within him and without, which make his thinking possible," Jones, *MIND*, vol. ii., p. 457. Cf. pp. 164, 305.

<sup>4</sup> "The *deus ex machina* of an hypostasised universal mind, independent of particular minds," Eastwood, *MIND*, vol. i., p. 485.

<sup>5</sup> "He (Hegel) means what he says, that God is spirit or mind, and exists in the medium of mind, which is actual as intelligence for us, at any rate, only in human self-consciousness," Bosanquet, *Essays*, p. 105. "I regard Idealism as a theory which represents the Universe as a thinking activity, an activity which reaches its highest form in this world in man," Jones, *MIND*, vol. ii., p. 294. "To treat reality frankly as the process whereby reality manifests itself in the mind of man," Jones, *Browning*, p. 300. Cf. also, pp. 297, 298.

knowledge of it.<sup>1</sup> In other words, the process which we trace in history, and which is still going on, is reality, and *all there is to reality*. My life and thought is an instrument by which the Absolute attains to a higher consciousness.<sup>2</sup> Reality develops in me,<sup>3</sup> not simply in the sense that my life contributes to the life of the world, but in the special sense that the new knowledge which I contribute is actually God's self-enlightenment. The laws of experience—experience, *i.e.*, as the developing, expanding process of increase in knowledge and appreciation which it is for us—are in all literalness the laws of the Absolute.<sup>4</sup> Philosophy has for its sole function the task of releasing the forms of thought which, in the course of this process, have become crystallised into dogmas, metaphysical concepts, institutions, transforming them back into their fluid state again, and rendering them capable of serving as instruments for a fresh advance.<sup>5</sup> All this gives to the newer phase of Hegelianism a decided positivistic tinge. The value of philosophy is exhausted in its immediate functional use, and it has no reference to ultimate "truth" in the old-fashioned sense. "Of ultimate and absolute reality," Mr. Wallace says, "philosophy will say positively and dogmatically but little, though it may limit much of what we have to do in temporal and relative service to

<sup>1</sup> "A state of consciousness symbolises something which is not originally there to be symbolised, points to an object which does not yet exist, and indeed becomes that object in the act of pointing to it," Jones, *Lotze*, p. 111. "The reality is from beginning to end involved in the meaning; it grows with the growth of the meaning, and it also guides the process of evolving the meaning by means of judgment," p. 365. "Reality has no meaning apart from the process of growing knowledge," *Browning*, p. 297. "The reality which man sets over against his own inadequate knowledge is posited by him, and it has no meaning whatsoever except in this contrast," p. 298. Cf. also Nettleship, *Phil. Lectures*, vol. I., p. 204.

<sup>2</sup> "Knowledge is the self-revelation of reality in thought, and our thought is the instrument of that self-revelation," Jones, *Lotze*, p. 370. "The effort to know derives its impulse and direction from the reality which is present, and striving for complete realisation, in the thought of man," *Browning*, p. 30.

<sup>3</sup> "The steps by which reality itself develops in the individual mind," Muirhead, *MIND*, vol. v., p. 516.

<sup>4</sup> Jones, *MIND*, vol. II., p. 302.

<sup>5</sup> "To comprehend the universe of thought in all its formations and all its functions, to reduce the solid structures which mind has created to fluidity and transparency in the pure medium of thought, to set free the fossilised intelligence which the great magician who wields the destiny of the world has hidden under the mask of nature, of the mind of man, of the works of Art, of the institutions, of the states and orders of society and of religious forms and creeds—such is the complicated problem of Philosophy," Wallace, *Logic of Hegel*, p. 28.

further the coming of the kingdom of truth."<sup>1</sup> So also Prof. Jones: "A system of philosophy must fail if it is faithful to its datum; it must perish with the life it explains, though it perishes only as that life does, namely, in such a way as to enter into the larger life which succeeds it".<sup>2</sup>

No doubt there is truth in all this. The content of reality is revealed to us in experience, and philosophy cannot hope to outstrip history, and gather in the wealth of meaning which only the future will reveal, but must be content to interpret life as it comes. But then philosophy has never pretended that it was its business to exhaust the content of life, but only, in so far as it aims to make any absolute statement, to determine the nature of reality in its general outlines. And in this sense I do not see how we can escape the result that it is philosophy's task to transcend its immediate practical value and discover absolute truth. We are determining reality thus absolutely when we call it the process of experience, quite as much as when we postulate a metaphysical existence beyond the human experience which is known to us. To claim that the business of philosophy is to interpret for us the immediate situation and *not* to tell us about the nature of absolute truth as a matter of theoretical knowledge, seems to me suicidal; it would practically confine us to the bare moment, and would take away all that we mean by the truth of *any* philosophical theory, including our own. In reality there is no reason why the two things should be incompatible. I can use my philosophy to interpret the present demand of life upon me, just because it is a theory of reality as a whole, of real existence beyond the present, with reference to which the present can be placed and understood. Each new experience will undoubtedly alter the content of reality for us, and so the task of interpretation is an endless one, which each generation has to perform for itself; nevertheless, it is the necessary ideal of philosophy to make this growing task the filling in of a general conception of reality as a whole which is regarded as true, not a mere advance to some indefinite goal of which we can say nothing except that it will never be reached. No interpretation of the past and present would be possible if we could not in some degree see these in the light of the whole which transcends them.

Hegelianism has no special advantage, therefore, in the fact that it insists upon the functional value of philosophy;

<sup>1</sup> *MIND*, vol. v., p. 554.

<sup>2</sup> *Ibid.*, vol. ii., p. 166. Cf. p. 161, and especially Dewey, *The Significance of the Problem of Knowledge*.

and we have still to ask whether the position for which it stands—that the sole reality which we can say anything about, and which, therefore, we must identify with the Absolute, is the reality of human experience<sup>1</sup>—can rationally be maintained. And here we have to meet at once the objection to a growing God. Apparently we have a God who starts from the barest minimum, and who gradually comes to a more and more complete consciousness of his own nature; and the difficulties in this are so obvious that I hardly think it necessary to enlarge upon them. As a growth in perfection, common sense would be quite ready to admit a gradual development of the human realisation of God's nature, but not, surely, of God's consciousness of himself, as it must do if human development and God are identical. To anything which has the appearance of making reality dwindle away, as we go back in time, to a mere nominal existence, philosophy and common sense alike have an insuperable objection. And if we were to go on, and sum up God's absolute nature in human development at the present stage which it has reached, as Hegel shows at least a tendency to do, we should have a *reductio ad absurdum* which would hardly need further discussion.

This latter conclusion, however, it would be unfair to insist upon; in reality it is excluded by a right understanding of the conception. For of course if reality is a process, it does not come to an end now, but is still going on, and Absolute reality is still to be revealed more completely. And this may seem to open a way for the solution of the difficulty we are considering. It is not simply the present and the past that is real; the future is real also. A thing was what it has become, and so it is what it will become.<sup>2</sup> Accordingly, if we ask what the truth of nature is, we are not bound down to the obviously untenable position that it is what mankind already knows about the world. Since reality is the process as a whole, the new part which nature is still to play in human life in the future is to be included in the conception of reality, and of nature. The fact that in our time reality has only reached a certain stage, does not make it necessary to define reality absolutely by this particular stage. And it may be admitted that this contention has a degree of force. But I do not see that it meets the real point at issue. The

<sup>1</sup> Not of course the reality *revealed* in human experience, for it is the essence of the common sense position, and its central point of difference with Hegelianism, that realities can be *known* in human experience which yet have an existence beyond it.

<sup>2</sup> Eastwood, *MIND*, vol i., p. 485; Jones, *Lotze*, p. 374.

essence of Hegelianism is the way in which it bases itself upon experience. Now experience, for us, is nothing if not a growth. It is a life of warfare; the overcoming of difficulties; the working out of inherent contradictions, and their solution by the discovery of a reconciling synthesis. This is the Hegelian dialectic in its application to human life, and the dialectic is made by Hegel the root of the matter, and is evidently intended to be an account of the inmost nature of the universe.<sup>1</sup> But the dialectic, once more, unless we empty it of everything that is characteristic of it, involves actual difficulties to overcome, and a synthesis which is only won at the end of a real and strenuous conflict; it is a process of judgment which, if it is genuine at all, implies an actual advance in knowledge, to a result which was not in consciousness at the start. Hegel's Absolute literally comes to consciousness of itself. Now while this is conceivable enough in the case of our experience, where difficulties can arise from the fact that reality exists beyond us, and furnishes conditions which we need to take into account, it is to my mind entirely meaningless when applied to the Absolute. The presence of a difficulty to his knowledge at once makes the Absolute relative and partial; and if a reality at a given stage in God's existence is unknown to God, we are entirely at a loss as to any way in which such an existence is conceivable. If, to meet this, we say that the knowledge of the whole is present all along, and that it is only the consciousness of its progressive realisation that shows an advance, we may, indeed, have solved the difficulty, but we have abandoned Hegelianism. We have given up the dialectic as the central fact of reality, and with it have set human development apart from the immediate experience of God. Human experience, at any rate, is a dialectic, a real growth, in which self-consciousness is actually a conquest, and the end is not already present in the beginning. But if God's life is a different thing from human life, it is not identical with it, and the task of philosophy has been no more than started. If, on the contrary, God *is* no more than human development, and the laws of developing experience are the laws of his growth, then the

<sup>1</sup> Cf. Jones, *Browning*, p. 301. "The effort to know derives its impulse and direction from the reality which is present and striving for complete realisation in the thought of man." "If reality is never known, it is ever being known," p. 303. Also Wallace, *MIND*, vol. v., 551: "The Absolute—the Hegelian God—is at least life, at least Ego, and if these are not process—self-surrendering, self-renewing process—it is difficult to see where we are to look for examples of process." Caird, *Lit. and Phil.*, vol. ii., p. 437: "Spirit can fully realise its unity only through a world which, in the first instance, must present itself as the extreme opposite of spirit."

future, except the very immediate future, is not *consciously* involved in the present; and if it is not *consciously* involved, it is quite impossible to get any notion as to what its existence means, since we are *ex hypothesi* shut off from appealing to a reality contemporaneous with present experience, but beyond it.

But will not the same difficulty exist, it may be asked, in any conception of reality as a process? Not the *same* difficulty, if we hold fast to the distinction already drawn. The trouble comes in making ultimate reality a growth of *knowledge*, as our experience is; and, in consequence of this, a development which is cut up into a multitude of relatively disconnected steps, or acts, as our experience is, again. We may have progress, however, without what in the popular sense we call a *growth*, and it only is the former which is applicable to God. Growth involves judgment, thought, and as such is the characteristic of all human experience. But the thinking process with us is a mark of our limitation, and would never arise unless we were met by an obstacle which demanded knowledge we do not possess; and an obstacle implies conditions which are not summed up in the experience itself, and which, therefore, are impossible to God, who is all in all. But because God does not have to stop and think how to surmount difficulties, it does not follow that his life is not in some sense a process. Our own experience teaches us how this can be. I may be doing something whose completion requires a considerable number of steps, and yet the end in its relation to the different parts, as each in turn comes up, is consciously present throughout them all. Now this, to be sure, is always a particular experience, which soon comes to an end; but we may take it as a *type* of what reality is most truly. If for God all existence enters into the embrace of a unitary purposive whole, we can see how, in principle, it may be a process, without being in the ordinary sense a growth. God does not come to know himself, but he progressively realises himself in action. The future is present as what we call a purpose, the past as what in human life we call a memory; and since no fact can ever, not simply cease to exert an effect, as it does with us also, on the constantly-progressing achievement of which it is a part, but cease to enter *consciously* into God's experience as having this relation to the whole—with us, on the contrary, things tend to pass from memory—there is nothing in the whole world, present, past or future, which has not an eternal existence in the life of God. So even for our own lives: it is only for us as we directly experience them that they are a growth; as entering

into God's knowledge, they have, like other things, an eternal value.

The general difficulty in the way of the conception I am criticising is, I think, sufficiently plain. And it will be unnecessary to do more than allude, again, to the further objection that it leaves no way at all for conceiving a real evolution, distinct from human development, such as science believes in. Scientific truth can only mean that certain formulæ are practically useful to us as guides to action; and any attempt to make Hegel's philosophy of nature go beyond this, and cover an actual fact of existence conceived as extending back in time before the appearance of man, will involve us in hopeless confusion. But the difficulties are not yet exhausted. Suppose we assume, for the moment, that the universe is a thinking process, which only comes to consciousness of itself in finite selves: how are we to conceive of the connexion which holds between these various selves? And my contention is, that in falling back upon experience, the Hegelian simply utilises the conception which he derives from a single human life—his own; and, therefore, that he is left with no expedient whatever for uniting different selves.

And first as to the facts. It is hardly worth while to collect passages in which everything is reduced to distinctions, or factors, within experience, or consciousness, or knowledge, but I will subscribe a few of these: "The objects we know are real because they exist for us in consciousness, and are yet distinguished from the mere sequence of our representations."<sup>1</sup> "Call it if you like the experience of the race, but remember that this connotes neither more nor less than normal, ideal, universal, infinite, absolute experience. This is the unconditioned which is the basis and the builder of all conditions; the Absolute, which is the home and the parent of all relations. Experience is no doubt yours and mine, but it is also much more than either yours or mine. He who builds on and in Experience, builds on and in the Absolute, in the System—a system which is not merely *his*."<sup>2</sup> "All that is for—not the self which is a particular object in space and time, nor yet any transcendent self, but—knowledge."<sup>3</sup> "A method for the investigation of the content of consciousness. Outside that consciousness we cannot and need not get."<sup>4</sup> "If the nature of all objects of philosophical inquiry is to be determined from fixing their place within

<sup>1</sup> Watson, *Kant*, p. 52.

<sup>2</sup> Wallace, *Logic of Hegel*, p. 169.

<sup>3</sup> Haldane, *MIND*, vol. xiii., p. 586.

<sup>4</sup> *Ibid.*, p. 588.



conscious experience, then there is no criterion outside of or beyond or behind just consciousness itself. To assume the psychological standpoint is to assume that consciousness itself is the only possible Absolute."<sup>1</sup>

Now I submit that there is, or is commonly supposed to be, such a thing as my life experience—a strictly limited affair, to which I do not belong as a part, but which is literally myself; and that this is the only experience of which I am directly conscious. When, therefore, I talk of conscious experience, and ignore entirely the possibility of there being a number of such experiences, the presumption is that it is my own to which I am referring. But such an experience, as I say, is no comprehensive whole, including within it a multitude of selves and objects; what it includes is only a *knowledge* of these realities. We can, indeed, in this way show how, psychologically, the recognition of myself, or other selves, arises; but to say that we also have an explanation of the manner in which the Absolute differentiates itself into actual concrete individuals seems to me to be an enormous *non sequitur*. And yet this seems to be what the Hegelian relies upon. The clearest statement I know is Prof. Dewey's.<sup>2</sup> Here philosophy is expressly reduced to psychology, and the psychological explanation is given as the ultimate one. All that we need to concern ourselves about is, not the relation of the individual and the universal consciousness, but the relation of the individual and the universal *in* consciousness, *i.e.*,<sup>3</sup> the peculiar psychological functions which these concepts serve. The sole thing, therefore, which we have to consider in dealing with any fact, is its *meaning* for the process of experience; its meaning *is* its reality.<sup>4</sup> And to appreciate this, we should distinguish two senses in which the word meaning may be used. In the perception, or thought, of an object, I may speak of my knowledge as meaning, referring to, something which is not itself, and which has an existence of its own apart from any experience of mine; or I may intend to call attention, when I talk of its meaning, to its teleological aspect, the part which the perception plays in the conscious experience where it occurs: and it is only the latter sense which the Hegelian has in mind, the former he ignores or denies.<sup>5</sup> The unity of experience which utilises all these distinctions, and within

<sup>1</sup> Dewey, *MIND*, vol. xi., p. 17. See also pp. 3, 8, 9, 14, 16; vol. xii., pp. 84, 86; Jones, *MIND*, vol. ii., pp. 162, 164; Ritchie, *MIND*, January, 1899, p. 4; Watson, *Phil. Rev.*, vol. iv., p. 356.

<sup>2</sup> *MIND*, vols. xi. and xii.

<sup>3</sup> Vol. xii., p. 84.

<sup>4</sup> *Ibid.*, pp. 392, 396; Jones, *Lotze*, p. 365.

<sup>5</sup> Jones, *Lotze*, p. 111.



which they appear, is the ultimate unity of the universe,<sup>1</sup> and a thought has value simply as it ministers to this process; there is no such thing as a definite and concrete reality getting itself represented in thought, which is what we commonly regard as a very important function of thinking.<sup>2</sup> There is, indeed, a truth which underlies this objection to epistemology; no doubt the *mere* correspondence of an idea to reality is not enough.<sup>3</sup> That human thought is such a *mere* reproduction of an eternal thought is precisely where the older Hegelians left us, and it is quite right to call attention to the fact that our experience has also a more positive value. But I do not see why, because our thought is a real factor in the life of the world, it should therefore be debarred from *also* being a representation of other reality; why the construction of the world by the self should be equivalent to the existence of the world *solely* as so constructed.<sup>4</sup> The natural belief is that our thought can help along the course of the world just because of its ability to reconstruct and represent to us what this world is, and so enable us to act intelligently; and I do not see why such a view is not entirely reasonable. At any rate, the rejection of it brings us back to experience as the sole reality, and I confess again my inability to see why this is not what common sense speaks of as *my* experience. Any attempt to avoid this conclusion seems to me to be possible only by using our terms ambiguously. We may argue that experience cannot belong to a self, which is itself only one category among others *within* experience; but if we distinguish between the self as an existence, and the act of thought by which this self is made an object of knowledge, the difficulty seems to me to disappear. Why should not a self, as a connected stream of experience, have the power of objectify-

<sup>1</sup> "The reality first given to us indefinitely opens out upon us into differences and sunders into the primary distinctions of subject and object. But we are not entitled therefore to forget or deny the unity of the reality in which the distinction takes place," Jones, *Lotze*, p. 170.

<sup>2</sup> Prof. Dewey denies that the self can be the highest category of thought (*MIND*, vol. xv., p. 74) for the reason that it is more than thinking (*i.e.*, doing and feeling). This implies that a thought-category has only a teleological, and not a representative use; otherwise there is no reason why a category should not be more than thought, and still be a thought-category, *i.e.*, represented in thought.

<sup>3</sup> Jones, *Lotze*, p. 41.

<sup>4</sup> The two schools of Hegelianism seem to me to complement each other here, the one emphasising the eternal reality known to the exclusion of human knowledge and its positive value, the other the function of finite growth in knowledge to the exclusion of any reality which it refers to, and which makes its functional use possible.

ing its own existence, and placing it among the other objects of its thought? We might argue in the same way that experience cannot be reality, because experience also is a thought category, appearing in its own definite place, and with its special function. Indeed, the attempt to limit the meaning of thought purely to a function seems to me to render impossible any theory whatever. It is not unusual to find recent expounders of Hegelianism defending themselves against the accusation of reducing things to ideas, by insisting as strongly as common sense even on the distinction of the two.<sup>1</sup> But what now does this mean? Apparently<sup>2</sup> no more than the very obvious fact—which I imagine no one will be rash enough to deny—that the perception, or thought, of an object, is different from the act of recognising this as my perception or thought. There is such a thing as an objective experience—this is the object—and there is the quite different experience which may follow it, of recognising the first experience as mine, and placing it with reference to the rest of my life—and this we may call subjective. Now the argument *seems* to be—I think *must* be unless we admit the separate existence of the object in a way the Hegelian persistently refuses to do—that the objective experience cannot be subjective, or mine, because it does not definitely recognise itself as such; the subjective experience is always an interpretation of the objective, and so a wholly new thing.<sup>3</sup> In other words, we are still referred each time to

<sup>1</sup> "To say that a thought is the thing thought of, or that one *psychical activity is another psychical activity*, is tantamount to dissolving the continuity of being," Jones, *MIND*, vol. ii., p. 460. "It is inconsistent with the possibility of knowledge that it should be the reality which it represents," Lotze, p. 272. Cf., also Dewey, *MIND*, vol. xi., p. 12.

<sup>2</sup> Cf., the first quotation above.

<sup>3</sup> "Our inner experience is just our outer experience on its inner side, or it is an experience in which that inner side is specially reflected on," Caird, *Kant*, vol. i., p. 641. Cf. Watson, *Kant*, p. 48. I, therefore, am only a part of experience, not the whole of it. Here, for example, is the way Prof. Dewey attempts to escape from subjective idealism: "Now the point I wish to make is that consciousness is here used in two entirely different senses, and that the apparent plausibility of the argument rests upon their confusion. There is consciousness in the broad sense, consciousness which includes subject and object, and there is consciousness in the narrow sense, in which it is equivalent to mind, Ego, *i.e.*, to the series of conscious states. The whole validity of the argument rests, of course, upon the supposition that these two are just the same—that it is the individual consciousness, the Ego, which differentiates itself into the two kinds of consciousness, subjective and objective. If not, mind as well as matter, the series of psychical states or events which constitute the Ego, and are the scope of mental science, as well as that in which all sentient beings participate, is but an element *in* consciousness.

the peculiar nature of the knowing experience itself, to the exclusion of any reference beyond itself; and so when I attempt to say anything about an experience, *e.g.*, that a certain objective experience was in reality mine, I am told that this recognition is a quite new fact of experience, and that this new fact it is which is subjective, not the former one.<sup>1</sup> But to this the answer is, that when I say the former experience was mine, I am talking of the former experience in its own existence—not of the later experience which knows and interprets it. And if I am not doing this, then, as I say, I may be able to act, but any *theory* is impossible, for I am shut up just to the present experience, and my apparent knowledge of anything besides, including the past experiences whose actual past existence is a necessity to give meaning to a theory which is based on them, is a delusion.

If this be so, Subjective Idealism is abandoned, and Absolute Idealism is assumed. The essence of Subjective Idealism is that the subjective consciousness, or mind, which remains after the objective world has been subtracted, is that for which all this objective world exists. Were this not so—were it admitted that this subjective mind, and the objective matter are both but *elements within*, and both exists only *for consciousness*—we should be in the sphere of an eternal, absolute consciousness whose partial realisation both the individual subject and the external world are." *MIND*, vol. xi., p. 11.

It seems to me that we have escaped from Subjective Idealism only by defining that theory in a way which is wholly different from what is ordinarily meant by it. If, by myself, and my experience, I mean only the special and limited class of experiences in which there is present a distinct recognition of something as a part of my life, then it is true that experience contains more than the me. But I deny entirely that this is what we do mean. When I declare that an objective experience was mine, I mean just what I say—that the actual objective experience, in its own existence, was a part of my life, without any reference whatever to this new experience of knowing it. There is no difficulty in this if we distinguish between what is psychologically subjective—*i.e.*, certain phases of the psychological experience in which my knowledge is dealing with my own life;—and what is metaphysically subjective—*i.e.*, certain experiences, both subjective and objective in the psychological sense, which form the unity of a life history, and as such exclude other objects of our knowledge. Prof. Dewey *assumes* that the psychological is the only valid meaning, but this is not something to be assumed, but proved. To say that this inner experience in the larger sense cannot be distinguished from our consciousness of the world (Caird, *Kant*, vol. i., p. 646) is either false or irrelevant. It is true that it is not separate from *our* consciousness (better, *knowledge*) of the world; it is, however, distinct from *the world*, and to deny that it is so is to identify the world with *our* consciousness, and so to escape from Subjective Idealism only in name.

<sup>1</sup> "The want of knowing, like every other, must take place before its interpretation, and therefore the relation of the subject and object is prior to the distinction between them which the process of interpretation brings to light," Jones, *Lotze*, p. 108.

There must be, however, something of positive value back of the Hegelian's contention, and I think it is possible to see what this is if we try for a moment to think of the world as a whole of connected *activities*. My act, as the expression of my life, is not an isolated fact which is mine alone, but at the same time that it is mine, it has a meaning for the whole; and so there is a sense in which it is perfectly true that, in each particular conscious act, the entire universe is expressing itself. This, I say, is true, and I think it is of very great importance, as against any extreme individualism. But it requires a good deal of explanation in order to serve as an ultimate statement. In the first place, when we speak of an act, do we mean the physical movement? or the conscious intention to perform it, and conscious realisation of its accomplishment and meaning? or do we propose to identify the two? In accordance with the notion of common sense, which I have contended is essentially true, the act as physical, and the act as a conscious experience, are two distinct things, however closely they may be connected. The first is a movement in the outer world, of which I get a knowledge through the senses, just as any one else might do,<sup>1</sup> and which is a fact other than the consciousness through which I apprehend it. The act as a conscious experience, on the contrary, which includes my knowledge of the physical act—not the physical act itself—as only an element, and usually a minor element, in its own make-up, is solely *my* consciousness. I am aware of it with an immediateness which no one else possibly can be; others cannot perceive it even, through the senses, but must learn about it, if at all, only indirectly, by interpreting some bodily movement of mine. Now, if the physical world be regarded, in its reality, as a conscious unitary experience, this *physical* act is, directly, an element in such an experience. It is now, however, no longer a single act, as it purports to be for our experience, but only an infinitesimal part of the whole world activity at some particular moment; and accordingly, if there is anything which can be explained as a function of a world experience, it would be this entire world activity, not what we know as the act of a particular self. But I think it would be granted

<sup>1</sup>There are, of course, certain muscular sensations which only I myself can feel, and the Hegelian appears to identify these sensations which accompany the movement with the movement itself (see Ritchie, *Phil. Rev.*, vol. iii., p. 19). From the natural standpoint, however, even these sensations are nothing but effects of the movement, while in the matter of visual and tactual sensations we are *entirely* on an equality, as regards the knowledge of our movements, with any one else.

that it is not the physical act which we have in mind, but rather the conscious experience as it enters, not into the physical, but into the spiritual meaning of the world. Now taking the act in this manner, as the expression of a conscious purpose, there are two ways of looking at it. In reality the act, through its physical expression, does enter into the meaning of the universe, and, for a knowledge of the world which should be at all adequate, this universal value would have to be recognised. But while this involves a whole of meaning, it is not a whole of *experience*; there is the other aspect also to be kept in mind. The conscious action is itself a fact—a limited piece of consciousness which is immediately aware of itself, and which, as such, excludes all the rest of the world. So far as its immediate consciousness goes, it may be aware of very little of its own meaning, and it certainly will not be aware of it completely. And taken in this way, it is not in any save the most vague and general sense the act of the universe, but rather of the particular individual of whose experience it is a part; and other acts are the acts of other individuals. In this individual life-experience any act is subject to a psychological explanation, but the explanation only extends to the connexions of my acts within my life, and not within the universe as a whole. Once again, it is perfectly true that any act has in point of fact a universal value; it has relations reaching beyond my life, beyond anything, even, that it is possible for me to foresee and intend. But the unity which makes this meaning possible is a unity of selves, to each of which its own acts belong, not a unity of experience. The act is also my act, involving a consciousness which is very limited as compared with the world entire, and as such it has no relation to any unity of experience which is coextensive with the world, and is open to no such explanation by reference to this as it is by reference to the exclusive individual conscious life of which it is a part. A conscious act is explained only in relation to the purpose which it consciously serves, and this is only possible in the case of a single stream of experience which is a real conscious whole; if we try to apply it to a multitude of such streams of experience, or conscious selves, going along side by side, with no continuity of consciousness between them, and each to a great extent in complete ignorance even that these other selves exist, our explanation must obviously break down. And if any other explanation is available, let it be forthcoming.

## V.—LOGICAL THEORY OF THE IMAGINARY.

BY PROF. G. J. STOKES.

IN his address before the meeting of the British Association at Southport Prof. Cayley, having referred to the amount of discussion which the notion of negative magnitudes has occasioned in philosophy, said: "But it is far otherwise with the notion which is really the fundamental one (and I cannot too strongly emphasise the assertion) underlying and pervading the whole of modern analysis and geometry, that of imaginary magnitude in analysis and of imaginary space (or space as a *locus in quo* of imaginary points and figures) in geometry: I use in each case the word imaginary as including real. This has not been, so far as I am aware, a subject of philosophical discussion or inquiry." Prof. Cayley then proceeded to say "considering the prominent position which the notion occupies—say even that the conclusion were that the notion belongs to mere technical mathematics, or has reference to nonentities in regard to which no science is possible, still it seems to me that (as a subject of philosophical discussion) the notion ought not to be thus ignored; it should at least be shown that there is a right to ignore it."

It is evident from the tone of the passage I have quoted that Prof. Cayley was not satisfied with the attitude adopted towards this notion by the majority of those who have treated the subject. Most writers seem to have adopted the view that however useful such an expression as  $\sqrt{-1}$  may be in technical mathematics, still, even in pure algebra, the expression is essentially devoid of meaning. The dissatisfaction implied in the above quotation must be my excuse for venturing to dissent from the eminent writers who have held this view and for attempting to evolve from the logical standpoint an interpretation for the imaginary of pure algebra.

Prof. A. Macfarlane in his pamphlet on *The Imaginary of Algebra* has divided analysts into three classes with respect to the theory and use of  $\sqrt{-1}$ : "first, those who have considered it as *undefined* and *uninterpreted*, and consequently

make use of it only in a tentative manner; *second*, those who have considered it as *undefinable* and *uninterpretable*, and build upon this supposed fact a special theory of reasoning; *third*, those who, viewing it as capable of definition, have sought for the definition in the ideas of geometry".

As an example of the first class Prof. Macfarlane instances the astronomer Airy, and as an example of the second the view put forward by Boole in his *Laws of Thought* (p. 68), who bases on the non-interpretability of the symbol  $\sqrt{-1}$  in mathematics, a claim to dispense with the interpretability of the intermediate results in other processes of reasoning.

Prof. Macfarlane does not adduce expressly any instances of the third class. It may I suppose be considered as representing the common opinion on the subject.

The following attempt at a logical interpretation of the mathematical symbol was suggested to me by the consideration of the function evolved by Boole in pursuance of the view referred to above. Here, however, the process is reversed and an attempt made to explain an uninterpretable symbol by an intelligible logical relation.

With the doubtful exception of Carnot, whose discussion of the subject in his *Géométrie de Position* touches very closely the view here advocated, the greatest names in mathematics are identified *exclusively* with attempts at finding a geometrical interpretation for the imaginary roots of unity. De Morgan who assigns a geometrical meaning to "double" and "triple" algebra says expressly of "single algebra" or what I have above called pure algebra that the symbol  $\sqrt{-1}$  is in it unmeaning. The same view seems to have been held by Clifford. It is expressly stated in the *Common Sense of the Exact Sciences*. More recently this view has been reasserted by Mr. Russell in his *Foundations of Geometry*, who however adds that he is "unacquainted with any satisfactory philosophy of imaginaries in pure algebra". Essentially the same standpoint is adopted by Mr. Whitehead in his recently published *Universal Algebra*.

This position seems to me to be essentially paradoxical, and the difficulties inherent in it very great. Whoever adopts this view is obliged to hold that in pure, or, to use Dr. Morgan's term, "single" algebra impossible or imaginary quantities are an anomaly, and that they receive whatever meaning they have as something tacked on from the outside by this application to a particular subject-matter. This would simply be an unaccountable process in any logical theory of the movement of thought. Moreover it evades precisely the point which has to be explained, *viz.*, how an



imaginary expression which arises quite out of itself and independently in single algebra, in the ordinary development of the subject (if at the same time somewhat of a prodigy and none too welcome) should nevertheless be capable of performing most useful work when the notation comes to be applied to what is, in appearance at least, an extraneous field; or, conversely, that a new subject-matter should be capable of receiving valuable, nay, indispensable aid from what, in its own native land is a sort of intellectual outcast, or, at best, a mere artifice. The view which I venture to advocate is the very opposite, *viz.*, that imaginary quantities have a real meaning in single algebra, and that, if a problem exists, it is to explain how this meaning finds its way into more concrete forms of inference and receives application in the material inferences of geometry.

I therefore propose to state:—

- (1) The logical theory of the imaginary.
- (2) To illustrate the application of the theory in some departments of mathematics.
- (3) To make a few remarks on the relation of the logical calculus of Boole to that of Grassmann's *Ausdehnungslehre* and to ordinary algebra.

The fundamental characteristics of algebra as contrasted with arithmetic is a certain indefiniteness attaching to its symbols. By this I do not mean that the letters employed may represent either known or unknown quantities, but the fact that the ultimate character of the quantity is left undetermined; and hence follows a surprising characteristic, that whereas in logic it is a fundamental principle that from truth only truth can follow, in certain operations of mathematics both true and false conclusions may equally follow from the data supplied. But inasmuch as the operations of mathematics are still, at bottom, conformable to logical laws, it will follow that a point will necessarily be reached when this indefiniteness will be removed. In logic, the indefiniteness which attaches to a disjunctive judgment, is necessarily got rid of, when that judgment is contradicted. In mathematics, the same point is reached, when we endeavour to extract the root of a negative quantity.

This gives us the clue to the logical theory of the Imaginary or the Imaginary of Logic as it may be termed. It was already recognised by De Morgan, and has since been pointed out and emphasised by Schroeder (*Operations-kreis des Logik Kalkuls* and *Algebra der Logik*) that the conjunctive "and" is the opposite of the disjunctive "or". In contradicting a disjunctive proposition, the contradictory is conjunctive.



We might therefore infer from this, that, inasmuch as  $\sqrt{1}$  has two roots, one positive and the other negative, which are disjunctively related to each other as alternatives, so the  $\sqrt{-1}$  will involve the same roots, no longer disjunctively but conjunctively related. Or, the expression  $\sqrt{1}$  will mean, simply, that 1 is to be multiplied with another 1 similar in sign to itself; whereas,  $\sqrt{-1}$  will mean a 1 which is to be multiplied by a 1 dissimilar in sign to itself. The whole mystery, therefore, underlying this symbol is that the identity or equivalence in the factors which is quantitatively implied, does not extend to the qualitative relation represented by the signs + and -. This is already recognised in all interpretations involving the concrete application of the imaginary symbol. If we substitute for  $\sqrt{-1}$  a symbol, say, + (-), expressive of this logical analysis, we shall find it acquires different meanings in different systems of mathematical analysis. It is identical with the "law of duality" of Boole. If V be an independently interpretable logical function,  $V(1-V)=0$ . Boole terms this equation the condition of the interpretability of logical functions. It is quite clear that Boole regarded  $V(1-V)$  as discharging an analogous function in logic to that performed by  $\sqrt{-1}$  in algebra; though the work contains no hint of the substantial identity of the two, which is here maintained. In point of fact, the diverse application which the function receives in logic and in mathematics establishes points of contrast sufficient to obscure the identity. In logic, precisely that element is excluded which characterises the imaginary in its application to mathematics. I shall refer again to this point when concluding, here merely remarking that the only writer who has attempted to make a mathematical use of the purely logical form is Hegel,  $V(1-V)$  is the Notion of Hegel.

If we turn from the logical calculus to trigonometry and substitute in De Moivre's theorem the symbol I have proposed for the usual  $\sqrt{-1}$ , we shall find that the results work out identically with the ordinary form of the theorem. We can apply also to this symbol the interpretation of rotation through a right angle, and as an immediate consequence we might arrive at that double interpretation of a line proposed many years ago by the late Prof. Sylvester in the *Messenger of Mathematics* and which subsequently formed the subject of controversy between Cayley and Sylvester in connexion with the Carnot-D'Alembert problem. The issue between these eminent mathematicians depended as I conceive on this, that Cayley and Mrs. Ladd-Franklin (who also

took part in the controversy) regarded the signs  $+$  and  $-$  as admitting of alternative interpretation in time or space, whereas Sylvester held the necessity of maintaining both interpretations at once.

Before leaving this subject of the application of the imaginary to geometry, I cannot forbear from touching on a question which has been agitated in the pages of *Nature* and elsewhere, *viz.*, the principle that the square of a vector should be negative. It has been claimed that to omit the  $(-)$  is not only essential to the physicist but is more consistent with ordinary algebra. Here again, the principle of the interpretation of the imaginary, advocated above, gives the clue. The imaginary, as a conjunctive relation of  $+$  and  $-$ , is on the one side identically related to a given direction, and in this relation would answer to the ordinary operations of algebra; but as non-identically or dissimilarly related (and in a directional calculus such as Hamilton's this is the dominant point of view) the  $(-)$  sign must be retained. Hamilton was therefore justified in saying "every line in tridimensional space has its square equal to a negative number, which is one of the most novel but essential elements of the whole quaternion theory" (*Lectures*, p. 53).

The analysis we have given admits of other illustrations as in Determinants. I now pass on to the more general question of its effect on our conception of the relation of the logical calculus to other branches of analysis. The idea of a symbolical calculus which should be perfectly general and applicable to all kinds of investigations is one which has frequently presented itself to both logicians and mathematicians. The idea occurs in the *Discours de la Methode* of Descartes. Such a calculus, Leibnitz seems to have had before his mind under the name of *Characteristica universalis* and Comte also in a passage in the *Synthèse Subjective* seems to have contemplated the same idea. It might also be said that Newton's definition of algebra as *Arithmetica universalis* implies the conception as an ultimate consequence. Boole maintained such a view in an article in the *Philosophical Magazine*. The idea of the isolation of the specious, universal or formal element of arithmetic or any other science, seems to lead to the conception of a theory of forms which should be perfectly pure and admit of general application, varied only by the conditions of the peculiar matter to which such a calculus is applied. Thus, the "principle of the permanence of equivalent forms" is regarded by Peacock as expressing the law of transition from an algebra arithmetically conditioned to a more universal, a symbolical algebra. The

only question seems to be, at what point shall this transition process cease, and *a priori* there seems no reason why it should cease, before it has brought the processes and inferences of every science within its scope. This is the real difficulty, in attempting to generalise from particular operations a general calculus of functions or operations. Shall it include under it, for example, the symbolism of chemistry? Such a universal science seems to become as empty of all real content as the old Aristotelian logic. The attempt to evolve in a symbolic calculus certain laws and methods common to a variety of symbols of operation, is apt to leave as a residuum simply the general notions of similarity and difference, connexion and separation. The result is formal logic, and formal logic not brought into any organic connexion with the material from which it is evolved.

The same problem thus presents itself to the logician and mathematician only viewed from opposite sides. The mathematician rises from the conception of particular laws and operations to the conception of the most general laws governing all operations. Logicians begin with the latter, but have not been successful in throwing light on the former. They have either dismissed the forms of mathematical inference as material consequences, or added them on empirically to inductive logic. A tendency has of late arisen to bring some of the forms of mathematical inference under what has been called the logic of relatives, but no satisfactory theory of the relation of such forms of inference to the ordinary logic has been put forward. Jevons seems to regard them as disguised cases of formal inference. De Morgan represents the opposite tendency and rather looks at formal inference itself as a refined residuum of material inference. In reality I believe there exists the closest connexion between all the forms of logical inference and of material inference, but the relation is not one of generalisation. In the theory of the imaginary which we have been discussing, we have only one instance out of many of such connexion. The only writer who has in general attempted to conceive the various categories of objective logic, not only as standing in systematic connexion with one another, but also as organically connected with the forms of subjective logic, is Hegel. His theory of the organic growth of the one from the other is opposed to the view which we are about to indicate, but has in common with it that it does not present the relation as one of mere degree of generality. The connexion of these two systems of forms is too vast a subject to be treated within the limits of this paper. It is only possible to briefly point out the general

distinction which exists between the processes of formal and material thought and their relations to concrete sciences, such as mathematics. The view we shall present is an expansion of the following remark of Grassmann's in the *Einleitung* to the *Ausdehnungslehre* of 1844:—

“Die formalen Wissenschaften betrachten entweder die allgemeinen Gesetze des Denkens, oder sie betrachten das Besondere durch das Denken gesetzte, ersteres die Dialektik (die Logik) letzteres die reine Mathematik”.

This passage contrasts logical inference based on universal laws of thought with mathematical resting on the particular. In principle, the calculus of Boole's *Laws of Thought* is identical with the ordinary logic. No inference can be drawn in the former which cannot also be drawn in the latter. It has all the weakness of formal logic in dealing with material consequence. It may be regarded as the limiting case of material inference. If we compare such a calculus of logic with the calculus of the *Ausdehnungslehre*, we shall find that the leading characteristic of the former is that it treats the terms with which it deals as self-identical units, which may coincide or not but between which no other relation can exist. The equations by which it is distinguished are:—

$$\begin{aligned}x^2 &= x. \\x(1-x) &= 0.\end{aligned}$$

On the other hand the *Ausdehnungslehre* presents equations the opposite of this:—

$$\begin{aligned}a^2 &= 0. \\a b &= -b a.\end{aligned}$$

It is evident that the literal symbols in the first set of equations have their value residing in themselves; those of the second set have their value in relation to each other, and in the character of that relation. The one calculus views the units with which it deals, as identical, self-related, coinciding or not coinciding but otherwise unrelated to each other. The other calculus regards its objects as existing only in relation, as constituted by relation to something different and out of that relation becoming zero. The connexion between these two algebras is not external or contingent. They are united by reason of the necessary synthesis of thought with objects of experience. Ordinary mathematics employs both processes of inference. In imaginary expressions the absolute disconnexion which the abstract use of the negative in ordinary logic involves is overcome by means of the opposite principle of relativity and necessary synthesis.

## VI.—DR. WARD'S REFUTATION OF DUALISM.

BY MISS E. E. C. JONES.

IN the interests of an idealistic view of the world, for which in his Gifford Lectures<sup>1</sup> Dr. Ward so powerfully pleads, he endeavours first to disprove the Naturalism and Agnosticism to which, as it seems to him, a widespread rejection of idealism is due. He has in view here primarily those who "are dominated by naturalistic preconceptions," holding that with them at any rate Theism has no chance of acceptance until an idealistic view has been established, towards which consummation a disproof of Naturalism and Agnosticism must be the first step.

But the real force of this disproof of actual mechanical theory is to be found in the fact that the careful examination to which it is subjected shows the mechanical member of the dualism into which experience has been split, to be (in the isolation which has been forced upon it) a poor travesty of reality, and quite incapable of standing alone as an explanation of any part of the concrete world. The argument of Parts i., ii. and iii. is indeed lucid and convincing, even without regard to what follows; but its full weight and meaning do not appear until it is re-read in the light of Part iv., the argument of which not only elucidates and reinforces the conclusions previously reached, but shows that *any* merely mechanical scheme of the world must necessarily fail, since any such must be based upon a futile attempt to separate completely factors which in living experience (and therefore for philosophy) are inseparably connected. This is quite compatible with its being necessary to make the separation provisionally for purposes of scientific or practical convenience.

I propose to follow in order, though not of course in detail,

<sup>1</sup> *Naturalism and Agnosticism*, the Gifford Lectures delivered before the University of Aberdeen in the years 1896-1898 by James Ward, Sc.D., Hon. LL.D. Edinburgh, Professor of Mental Philosophy and Logic in the University of Cambridge. 2 vols. London: Adam and Charles Black, 1899.

the indictment against Naturalism, before considering the argument of Part iv.

What Dr. Ward understands by Naturalism is a "doctrine that separates Nature from God, subordinates Spirit to Matter, and sets up unchangeable law as supreme. It means . . . 'the extension of the province of what we call matter and causation and the concomitant banishment from all regions of human thought of what we call spirit and spontaneity . . . [till] the realm of matter and law is co-extensive with knowledge, with feeling, with action'. This naturalistic philosophy consists in the union of three fundamental theories: (1) the theory that nature is ultimately resolvable into a single vast mechanism; (2) the theory of evolution, as the working of this mechanism; and (3) the theory of psycho-physical parallelism, or conscious automatism, according to which theory mental phenomena occasionally accompany but never determine the movements and interactions of the material world" (i., 186).<sup>1</sup>

These three theories accordingly the author considers in Parts i., ii. and iii. of his book. He here accepts provisionally the mechanical view of the universe, and traces its development and implications, and it is only when it has been shown to be a broken reed even in the hands of its adherents—when the unsatisfactoriness of the real principles of Naturalism as actually current has been proved from within—that a complementary line of argument is taken up in Part iv., where we have an explanation of the way in which the assumptions at the root of Naturalism and Agnosticism grew up, and a clear exhibition of the true place and methodological character of the theory.

It is as philosophy that Naturalism "aspires to resolve the actual world into an actual mechanism," holding (with Laplace) that "an intelligence who for a given instant should be acquainted with the forces by which Nature is animated, and with the several positions of the beings composing it, if further his intellect were vast enough to submit these data to analysis, would include in one and the same formula the movements of the largest bodies in the universe and those of the lightest atom. Nothing would be uncertain for him; the future as well as the past would be present to his eyes." And as the material world includes human beings, the alteration of "positions" due to them has also to be taken account of, hence "before the future can be deduced from

<sup>1</sup> The references are to *Naturalism and Agnosticism* unless otherwise stated.

the past all motives must admit of mechanical statement, and the motions of matter and its configurations be the sole and sufficient reasons of all change".

Abstract, hypothetical, merely descriptive and only approximately applicable to reality as this mechanical scheme is, it must no doubt be admitted that granted a knowledge of the *positions* and *forces* in a given system at a given moment, both future and past positions and forces might theoretically be deduced by an intellect "vast enough," on the supposition of there being no interference—that is, no alteration from outside the system in quantity or direction of force.

But since any scheme of the Universe is bound to take all the facts of experience into account, we must ask, what has the Mechanical Theory to say not only to the phenomena of life and mind, but also to the qualitative differences which are found even in inanimate objects? Can these be in any way brought to a mechanical statement?

Such answer as can be supplied to this question, must be furnished by Molecular Mechanics. Can "all physical phenomena—however complete, however ultimate, however numerous their qualitative diversities may be, and remain, for our perception . . . still be shown to correspond to, and be summed up by, purely dynamical equations, such equations describing the configurations and motions of a system of masses called molecules from their minuteness"?

As contrasted with Molar Mechanics, molecular mechanics turns out to be Indirect instead of Direct, and Ideal or Fictional instead of merely Abstract. It resolves the physical characteristics of sensible bodies into mechanisms and these mechanisms into non-matter in motion. Thus it ceases to be even descriptive of "what actually goes on" in the real world, and its objects are mere fictions of the understanding, not even conceivably presentable facts—and we find that, even as regards inanimate things, the Mechanical Theory "begins with real bodies in empty space, and ends with ideal motions in an imperceptible plenum . . . begins with the dynamics of ordinary masses and ends with a medium that needs no dynamics or has dynamics of its own". And if for Mass is substituted Energy, and for Mechanical Physics the Science of Energetics, the case does not seem to be much amended. According to this new doctrine all change is a transference or transformation of energy.

But when we find that according to the accounts given by physicists matter is nothing but a vehicle or receptacle of Energy and cannot be known apart from energy, and that



all which we perceive of external objects is due wholly and solely to energy and energy alone, matter seems to vanish and nothing remains but energy and its transformations. Of the several forms of energy, it is only quantitative equivalence that can be asserted—we have neither *a priori* nor *a posteriori* grounds for concluding that forms of energy qualitatively distinct are of fundamentally the same nature—that is, that they are at bottom mechanical. And, moreover, we are not justified in supposing that there are no qualitatively different forms of energy except those already known to us.

As to the doctrine of the Conservation of Energy, on which Mr. Herbert Spencer tries to base his Theory of Evolution, it is shown (i., 172) that the two grounds on which this doctrine is assumed are (1) that it is borne out by experience as far as we know, and (2) that it seems the simplest and best working hypothesis—it “tells us nothing about the quantity of energy in the universe as a whole, and does not even allow us to say that such quantity is an amount eternally fixed” (i., 171). In Dr. Ward's view the principle of the Conservation of Energy regarded as a postulate, is the principle of Causality in a quantitative form applied to physical changes. It is a real principle, but it is only the quantitative relations of physical processes that it renders intelligible. To the qualitative differences in physical processes the Conservation of Energy has nothing to say (i., 176).

The difficulty of dealing with qualitative differences from the mechanical standpoint is at its height when we come to psychical phenomena; and in chapters ix. and x. of Part ii., in which Herbert Spencer's treatment of Life and Mind and Biological Evolution as understood by Lamarck and Darwin and their successors, are discussed, we turn to the consideration of such phenomena, and especially to the question, how it is possible to get from Inorganic to Organic Evolution and from Life to Mind, by help of the single principle of Conservation of Energy.

Dr. Ward shows that Mr. Spencer in his doctrine of Evolution confuses (1) *energy* and *work*, (2) *evolution with guidance* and *evolution without guidance*, and that as a result of his rejection of a “definite primitive collocation,” the cosmos can be for him but a chance hit among many misses. He points out the impossibility of deducing the phenomena of celestial, organic and social evolution from the principle of Conservation of Energy taken alone, and criticises Mr. Spencer's three principles of interpretation—the Instability of the Homogeneous, the Multiplication of Effects (= the

effect is always more complex than its cause) and Segregation (by which is meant that aggregates composed of dissimilar units are, by some force acting indiscriminately on them all, segregated into groups of similar units, i., 238).

In considering Spencer's treatment of Life and Mind, Dr. Ward explains that it is only by a confusion between a *strictly mechanical* and merely *figuratively mechanical* use of his formularies that Mr. Spencer has succeeded in persuading himself of the possibility of extracting progress, history and meaning out of a purely mechanical theory.

It is shown that he confuses Analysis with Abstraction, and abstracts until there is nothing left, and then in the 'rational synthesis' which follows this 'ultimate analysis,' brings back elements which had really been eliminated—the illegitimacy of the procedure being veiled by the principle of continuity and the gaps existing in scientific knowledge.

With regard to the step from Inorganic to Organic Evolution, Mr. Spencer explains that two volumes of the Synthetic Philosophy are missing—the volumes on Inorganic Evolution, which should come in between *First Principles* and *The Principles of Biology*. "The closing chapter of the second" [volume on Inorganic Evolution], he says, "were it written would deal with the evolution of organic matter—the step preceding the evolution of living forms. Habitually carrying with me in thought the contents of this unwritten chapter, I have in some cases expressed myself as though the reader had it before him, and have thus rendered some of my statements liable to misconstruction." Meanwhile no hint of any rational advance from Inorganic to Organic has been furnished either by Mr. Spencer or any of the biologists who during the last quarter of a century have been perplexed by this problem.

When we come to the transition from Life to Mind we find that what has to be done is to interpret in terms of Matter, Motion and Force phenomena into which matter, motion and force do not enter (i., 266). "The difficulty is twofold; first to get rid of extension, and then, since with extension matter goes too, to get back the real in some other form." How Mr. Spencer accomplishes this is indicated in a quotation from the *Principles of Psychology*, i., 401, 2nd ed. "Speaking generally therefore we may say that while the physical changes are being everywhere initiated throughout a *solid*, the psychical ones, or rather those out of which psychical ones arise, admit of being initiated only on a *surface*. . . . Those abilities which an intelligent creature possesses, of recognising diverse external objects and of adjusting its

actions to composite phenomena of various kinds, imply a power of combining many separate impressions. These separate impressions are received by the senses—by different parts of the body. If they go no farther than the places at which they are received, they are useless. . . . That an effectual adjustment may be made, they must all be brought into relation with one another. But this implies some centre common to them all through which they can pass; and as they cannot pass through it simultaneously they must pass in succession, so that as the external phenomena responded to become greater in number and more complicated in kind, the variety and rapidity of the changes to which this common centre of communication is subject must increase, there must result an unbroken series of these changes—*there must arise a consciousness*” (i., 267, 8). When we supplement this by reference to the chapter on the Substance of Mind, and learn that the concepts of Mind and Matter are only mere symbols of some unknown and unknowable Power, and that whether Mind should be expressed in terms of Matter, or Matter in terms of Mind is “a question scarcely worth deciding,” while at the same time “*all phenomena*” are most simply expressible in terms of Matter, Motion and Force, and on the other hand, “to translate so-called Spirit into so-called Matter” is “wholly impossible”—we are driven to the conclusion that as regards this problem, at any rate, the Synthetic Philosophy is inextricably confused and contradictory.

In Biological Evolution “the problem is merely to explain the diversity of living forms, and that not by the help of mechanical but of biological conceptions,” and it appears that the greatest biologists do not even suggest a mechanical origin of life, and among the “factors of organic evolution” are constrained to recognise some that are teleological. And we find that in biology *organism and environment* are as strictly correlative as *subject and object* are in psychology, while in comparing the world of living things with inanimate nature, it seems that in the latter there is a “uniform tendency to pass in the shortest and easiest way to physical quiescence, fixity and equilibrium”—to follow, that is, the line of least resistance—and in the former we find “a steadily-increasing differentiation of structure and composition, entailing a large storage of potential energy”. And the psychological aspect of this increasing differentiation brings us face to face with the principles of Self-conservation and Subjective Selection. Both of these involve feeling and activity, and are real and concrete, instead of being merely

metaphorical (i., 297) like Natural Selection—the difficulties of which theory are very much lessened by the acceptance of Subjective or Hedonic Selection, which will account for variations on which Natural Selection may act, and removes the tremendous difficulty in the way of understanding by means of Natural Selection cases in which utility results from the co-ordination of a number of variations which are separately useless (i., 300).

What we have had up to this point is a prolonged and careful investigation, first of the Mechanical Theory and then of the Theory of Evolution. These as set forth by their most able and accredited expounders, have been invited to say the best they can for themselves, but have revealed both their inherent weakness as systems, and their failure to apply to the concrete phenomena of the real world. Matter has vanished into “non-matter in motion,” the account of Evolution given by the Synthetic Philosophy turns out to be on the one hand incoherent, on the other unable to deduce Mind from Matter; Biology as expounded by the ablest biologists, is found to involve teleological and psychical factors.

In the Theory of Psycho-physical Parallelism (Part iii.) Mind is explicitly taken into account, and this theory in its various forms endeavours to find an answer to the question: How are psychical changes related to the physical changes in the organism?

There is not space to examine at any length the admirable discussion carried through in Part iii. It is first explained how, accepting the dualism of Extended Substance and Thinking Substance formulated by Descartes, Psychology and Physics, dropping the notions of Substance and Cause, have each elaborated conceptions suitable to their own sphere of inquiry, quite apart from any reference to their ultimate co-ordination. On the one side we have Mass, and quantitative relations expressed in equations of Motion; on the other Consciousness, a flux of presentations; and the Category of Activity, or Inherent Efficiency, which it should belong to psychologists to investigate, is often by them regarded with suspicion for the very inadequate reason that it is not appropriate in that opposed sphere of science which deals with dead mass, and they substitute for an examination of psychical activity an inquiry into the relations of co-existence and sequence which hold between psychical events and physical movements. The theory of Psycho-physical Parallelism has to be treated under three heads:—

(1) A series of physical changes or brain-processes.

(2) A simultaneous series of psychical changes or processes accompanying them.

(3) The relation between (1) and (2), which is assumed to be not a relation of interaction.

The only correspondences of the physical series that we know of are correspondences between states and processes of nerve tissue, and states and activities of consciousness, and the view that these are not a relation of interaction, is not due to experts in physiology or psychology, but is a result of accepting the assumptions of the mechanical theory. There would seem to be great difficulty in giving, in definite and precise terms, any parallel account of the psychical series with all its qualitative diversity and quantitative vagueness. And there is the further difficulty that "if this psychical series is to be my experience as it is for me, or yours as it is for you, then *all those external perceptions which are the physicists' prime data, and all the conceptions whereby they are summarised, belong to it and are the outcome of its processes.*<sup>1</sup> So regarded, they form a unity; within this unity we find indeed a duality, that of the correlative subject and object, but we find no dualism of external and internal, physical and psychical, matter and mind. To come within the range of such a dualism and to justify any notion of parallelism, we must leave the properly psychological standpoint of my experience as it is for me, or your experience as it is for you. We must take up instead the standpoint of my experience as it is for you, your experience as it is for me. Then, indeed, as I am for you primarily a portion of the physical world, and you in like manner for me, it becomes natural to locate each one's experience inside his skin, his environment being outside it; to say that of the chairs and tables, moon and stars, and the rest of this external world he has ideas; to ask the puzzling question how these ideas are produced or whereabouts inside that skin the thinking thing is; and finally to take his body to pieces in the hope of answering the question. But this is still not the worst; for once accustomed to speak of one's fellowman's experience as made up of ideas in that man's head, one is led by parity of reasoning to think the same of one's own experience. And there is at least one further source of confusion still, when from concrete experiences in which the individual percipient is plainly recognised, has his name, place and date and his manifold idiosyncrasies, we pass to what is known as the scientific or objective standpoint, where the

<sup>1</sup> Italics are mine.

subject experiencing is entirely ignored" (ii., 10, 11). Suppose we take it for the present that when we speak of the parallelism of physical and psychical series, by *psychical* is meant my experience not as it is for myself but as it is for the psychologist who is studying my brain and my organs of sense and movement. Even then, when we come to ask what is meant by the *parallelism* of the two series, their absolute disparateness seems to exclude entirely that serial correspondence which is what is understood to be meant by *parallel*. It is not necessary to follow Dr. Ward's account of the unsuccessful attempts to introduce a substantial unity where we have not succeeded in getting any qualitative unity (ii., 15-21) which are made in Clifford's theory of Mind-Stuff (which turns out to be only a crude form of materialistic Monism under a fresh name) and in the Two-Aspects Theory—which fails "to indicate the unity to which [the aspects] belong and to show that they have such congruence as befits complementary sides or aspects of the same thing".

These endeavours breaking down, we go on to the *Conscious Automaton* Theory, according to which there is invariable concomitance between the series, but no causal interaction.

The theory of Psycho-physical Parallelism is represented by its supporters as a strict inference from facts (ii., 6) and no mere speculation, but Dr. Ward undertakes to show that both these assertions are inaccurate, and that the basis of the theory is that Cartesian dualism which he regards as speculation of the most questionable kind. He shows that the 'Conscious Automaton' doctrine has defects which oblige us to doubt its implicit assumptions, and then (in Part iv.) proceeds to expose the shortcomings of that Dualism which the theory of Psycho-physical Parallelism presupposes.

In Conscious Automatism the dualism between the psychical and physical series is accepted as complete, and their concomitance as invariable but not causal—there is co-existence in space and time but no interaction. But the self-contained completeness of the psychical series is threatened by *Sensation*, and that of the physical series by *Life* (ii., 25, etc.). Here Dr. Ward points out that if the two series are really independent and separate, each going along by itself, both parallelism and interaction are alike inconceivable, and if they are really members of one whole, they cannot be severed from each other and yet be the same as they were before. "Constant parallelism *plus* absolute separation is logically so unstable a combination that of

necessity one or other term must be dropped" (ii., 29). And accordingly we find that the adherents of Conscious Automatism do either lapse into some form of crude monism, or subordinate one series to the other, and the upholders of Psychical Epiphenomenalism maintain the contradictory positions that on the one hand there is no causal connexion between the two series, and yet on the other the psychical is a collateral product of the physical (i., vi.). If Mind is thus resolved into the absolutely ineffective shadow and accompaniment of mechanical phenomena, and volitions do not enter into the chain of Causation, their activity vanishes altogether from the world. But we can only accept this result if we ignore or deny individual experience, of which activity and the realisation of ends are elements.

What Dr. Ward is concerned to insist on in Part iii. (in addition to pointing out the defects of theories of Psycho-physical Parallelism), is, that an appeal to experience forces us to admit the reality of psychical phenomena of an active kind, and to recognise that human volitions do affect the objects of our experience—that they do invade the mechanical sphere at least as a *vis directrix*. This seems as much matter of direct experience as anything can be; and its acceptability from a theoretic or systematic point of view becomes more obvious after a perusal of Parts iv. and v.

So far we have seen that the attempt to explain the world purely from the mechanical side breaks down at every stage—but it is only when we come to Part iv. that Dr. Ward is able to put his case, whether for criticism or construction, in the strongest form. Hitherto he has on the whole only attempted to discredit the current assumption of the dualism of Mind and Matter in as far as it has given way under every existing philosophical scheme based upon it or has come into obvious conflict with fact. He goes on in Part iv. to examine this dualism itself—to show how it has arisen, and how if set up as more than a convenient methodological device it is in direct opposition to actual experience, and fatal to the construction of any coherent philosophy, and confronts both the naturalist and the psychologist with insoluble problems. The treatment of Dualism and Duality in this Part iv. seems to me to be the most impressive part of the book, and to be of extraordinary value and originality. And the author's method here is still an argument *ad hominem*—he says in effect to the Naturalist, You have appealed to facts of experience, and to facts of experience we will go.

We have, it seems, for the most part been struggling on in Science, Philosophy and Religion, hampered by a false



theory which now appears to be as much a blunder as it has been found to be a hindrance. It has been as embarrassing to the psychologist as to the naturalist, making the question of the relation between body and mind hopelessly perplexing to the naturalist, and that of the perception of an external world equally baffling to the psychologist. To trace home and unmask a view so worked into past and current thought, so generally accepted without question, so embodied in the very vocabulary which the critic has to use, was an enterprise requiring extraordinary insight, patience and courage. It will probably prove to have cleared out of the way many confusions of thought.

Part iv. takes up afresh the examination of the theory that "if we are to exhibit the sum of things from the beginning and connect each to each completely, we must start from matter and motion" (ii., 99), but it now approaches the question from the *formal* or more general side, and proceeds to inquire expressly into the nature and assumptions of knowledge. We turn to actual experience, and endeavour by reflexion upon it to escape from the perplexities of Dualism and that Agnostic Monism or Revised Materialism which those perplexities have brought into fashion (ii. viii.).

When we analyse experience, what we do find is *not* a Dualism of Matter and Mind, but a duality in unity of Subject and Object. And Experience does not begin with a disconnected manifold, but in every concrete experience, as there is one Subject so there is one Object; "the Subject is continually in touch with one world, one environment, . . . given a subject or centre of experience, and such an objective complement; then the most salient feature is their interaction: the feelings that objective changes induce in the Subject and the Actions to which such feelings lead". Our difficulty in this investigation is that the relation between Subject and Object in Experience is fundamental and ultimate. "To enounce," says Dr. Ward, "that Experience is a whole or more precisely a continuity, that it consists in the correlation of Subject and Object as its universal factors, is a statement that seems to tamper with no facts and to involve no hypotheses" (ii., 130).

It is further maintained that every concrete experience is self-conservation, is Life—that subjective selection is determined rather by the 'worth' than by the 'content' of objects,—by their value and interest to the Subject, than by their intrinsic characteristics, that Conation is more fundamental than Cognition, and that even spatial and temporal relations involve elements due to activity initiated by feeling.

Passing to consider the relation between individual experience, and Experience as the result of intercourse between individuals (intersubjective intercourse), it is shown that the second—the empirical knowledge which men have in common, systematised and formulated by the help of abstract conceptions—is really only an extension of individual experience. The current Dualism of Mind and Nature is shown to have arisen from the fact that while Psychology undertook to deal with individual ('Subjective') Experience, Natural Science occupied itself with 'Objective' or Common Experience; and we may therefore hope to refute Dualism by making clear the relation of these two forms or phases of Experience.

Each individual in his own private experience is face to face with objective reality in the most fundamental sense—for even Sensations are essentially objective—are for Cognition a 'this' and a 'what'—have inalienable characteristics (*cf.* ii., 113, 116). In this experience the stage in which there are definite conceptions is preceded by a stage in which there are none, and in the earlier stage there is no distinction between percept and object, no trace of Dualism. To illustrate the organic unity of individual experience, Dr. Ward considers it with reference to Range in Time, Familiarity or Expertness and Intellective Synthesis. With regard to the first he points out that for any experience at all there must be an enduring present and for its fuller development some memory of the past—this of course implies a measure of that abstract generality or universality which is opposed to merely concrete particularity. What we know as past has the marks of the past about it, and as we know present objects immediately, so what we remember—our own past experience—we know immediately also. Its "temporal signs . . . plainly bespeak that unity and solidarity of individual experience that only subjective activity and interest can bring about" (ii., 158). "In this way there arises at once our subjective or biotic time, along with its concrete 'filling,' both inseparable from the individual subject to which as its own objective experience they immediately pertain. It is from this that we advance to the mediate conceptions, first of trans-subjective or common time, and finally of absolute time. Again it is from the immediately presented content of this subjective time . . . that we proceed to range events chronologically in the common historical time which we come to think of in dualistic fashion as independent of all subjective factors" (ii., 158). Space is shown to be amenable to similar general considerations (including some ubiquity in individual experience, analogous to the more or less *enduring now* above referred to); and if the

account of both which is here put forward is accepted, it would seem that the relation traced between *biotic* and *absolute* Time and Space, opens a way of escape from some of the difficulties which have gathered round those conceptions.

In the consideration of Familiarity or Expertness it is urged that there can be no beginning of experience from a *tabula rasa* or from a chaotic manifold (in this respect the theory here put forward is an improvement upon Kant), and that any uniformity on the part of the object would remain unknown and meaningless to any subject not itself characterised by continuity and uniformity. What we really mean when we talk about uniformity of Nature is uniformity of Experience. No experience deals either with things *per se* or with the totality of things—a subject having some of that selective power which belongs to all living things, can secure an orderly environment of which it is itself the centre. There seems no warrant for the assumption made by dualism of a uniformity apart from experience—the uniformity of Nature upon which *Science* depends is entirely conceptual. Apart from subjective interest and activity we could never predicate unity or plurality, never have repetition of experience or the increase of uniqueness and definiteness which goes along with development of experience. And however far this increase of definiteness may proceed, we never transcend the duality in unity of subject and object, the objects are always *objects of the subject*: as little as I can ever “catch myself without some perception,” just as little can I ever catch a perception which is a perception without me. There is always a duality in unity which has the character of an organic whole.

By Intellectual Synthesis is meant those features of individual experience which first make intersubjective intercourse possible—especially the Comparison which is first suggested by practical needs, and leads to the recognition of similarity in things and events that are partly different (ii., 164). And “Conation and Cognition working always together, the individual subject comes to distinguish its own body or self from other bodies as not-selves, and to attribute to them also likes and dislikes and the power to know and to do. It is obvious that the presence of other individuals of its own species within its environment, together with its peculiar interest in these, will facilitate the recognition of both as selves, and so in turn make the recognition of other sorts of selves easier” (ii., 164, 165). The important question here is, How does the individual come to a consciousness of

Common Knowledge (ten men and one sun, *e.g.*)? Each experience is as a whole unique and incommunicable—in this individuality consists—but for common intercourse there must be some common knowledge. Dr. Ward points out that this intersubjective intercourse probably begins with such a simple procedure as pointing to this or that object, and upon that in the object which is the same or similar for all is based the possibility of communication (ii., 167, etc. Cf. Bradley, *Appearance and Reality*, 2nd ed. pp. 250, 254, 255, 258, etc.).

As far as practice and history are concerned there is no appearance of discrepancy between individual and common knowledge, since in both we deal with the concrete cases which are real and unique. But it is different in the case of theoretical knowledge, since here intersubjective intercourse leads to dropping all reference to individual subjects.

This omission is traced to the working of three conditions which result from this intercourse between individual subjects—namely, the notion of the trans-subjective, the hypothesis of introjection, and the reification of abstractions. By Trans-subjective is meant that which is objective from the standpoint of universal experience, the *one* sun which is the common object of ten men who are looking at it. Since this sun is considered as independent of *any one* of the ten, it comes to be regarded as independent of *every one* of them, and so the reference to a subject is eliminated altogether and dualism begins. Introjection (ii., 172, 173) is akin in meaning to Animism, and has been explained in a passage previously quoted.

The dualism of Mind and Matter has perhaps been sufficiently disposed of. What is to be said of the "dualism" between the empirical and the rational, *i.e.*, between individual and trans-subjective experience? Dr. Ward refers here to the view of Kant (which he endorses) that "the two subjects must be at bottom the same individual and the two objects must be synthesised into one" (ii., 181; cf. 167, 171, etc.).

The Rational is simply universal, collective or conceptual experience, but all reference to a subject is dropped by Science, and so the rational subjectless object comes to be opposed to individual experience, with its perceptual subject. But the Rational and the Empirical cannot be severed. Rational or Universal Experience is only an elaboration of individual experience, and is continuous with it, the sole business of the intellectual forms of the one being to establish relations within the concrete reality of the other. And everywhere—for perception as well as for thought—Kant's

"Synthetic Activity" is fundamental, and we are emphatically told that it is always conative and never merely cognitive and that "the unity and constancy of the subject of experience are due to the nature of its activity" (ii., 192).

The difficulties raised about the source of the conceptions of Cause and Substance are met by showing that causality "is found, and found first of all, whatever be its validity, in our own doing and suffering. . . . Thinking is doing, and like all doing has a motive and an end" (p. 189). The notion of Substance (not substances) is shown to be just the bare idea of an undetermined something, reached by successive abstractions.

In part iv. the assumptions on which *any* Naturalistic scheme must be based are exposed and discredited, and the conclusion to which we are led is that the Dualism that has been accepted as a doctrine of Reality, is no more than a convenience of Scientific Method. Nature as known to us is "conformable to human intelligence" and "amenable to human ends" (ii., 254). "Apart from intelligence there is no intelligible world," and only for conscious subjects could uniformity of Nature have meaning or importance; and again the fact that conscious subjects have been able to mould their experience on these lines testifies to the spiritual nature of the object-element in that Experience, and in all the advance and development of knowledge there is "a constant reciprocity . . . between subject and object" (ii., 255). Reflexion has shown "that the unity of experience cannot be replaced by an unknowable that is no better than a gulf between two disparate series of phenomena and epiphenomena. Once materialism is abandoned and dualism found untenable, a spiritualistic monism remains the one stable position."

The whole argument appears to me to be thoroughly coherent, and the refutation of Dualism and the constructive suggestion put forward in the end to be of the very greatest interest and importance.

Here at last there does seem to be a hint, and more than a hint, of a real and actual unity in difference. We have, in the reality of concrete experience, a genuine duality—the finite spiritual subject in the strictest unity with its object, the otherness of which is as indisputable as its inseparability. There is also a certain unity in difference between the many finite minds which are objects to each other, and each of which interprets the rest as being of similar nature to itself. And if the so-called 'matter' which is object to them all, and by means of which alone each of them knows the existence and character of other minds—if this is indeed itself not

foreign in nature, but mind or spirit like the rest (and to this conclusion we are driven)—then, in it too will be found the duality in unity of subject and object. We are here provided with a conception which may prove equal to accomplishing for the Absolute Idea a service similar to that which Utilitarianism accomplishes for 'Transcendental' Ethics, and the label *Spiritualistic Monism* seems to be rightfully applied to a theory which supplements the many finite spirits which we each know directly (as ourself) or indirectly (as others) by an all-pervading spirit that on its own object-side is that concrete continuous Object which we have called the material universe, and the only non-ego that is ever directly presented to any finite subject. This seems to provide a possibility of supplying Lotze's view with a more satisfactory spiritual unification between the members of his Realm of Ends than he himself has indicated. But I am not, of course, sure of having fully grasped and rightly interpreted the view which is here suggested to us without being followed out into its consequences—and can still less profess to have tested it by application to all the questions which a theory of the universe has to take account of. As far as I can form a judgment however, it seems to be a real 'fetch' of genius (to use Dr. Bain's picturesque expression); and we are justified in supposing that a thinker so sure and penetrating, so patient, thorough and scrupulous as the author of this book has here and elsewhere shown himself to be would not have put forward, even in hint and outline, a philosophical view of such importance unless he had first severely scrutinised and tested it.

The greatness of the enterprise and the force and steadfastness with which it has been carried through tend to withdraw remark from those excellencies of style and articulation which together with fulness of detail and wealth of illustration are inestimable aids to the reader—though they make it all the more difficult to convey in a few pages any adequate idea of the work. And with all these helps to interest and comprehension, the view put forth—in itself, I think, both simple and irresistible—is perhaps too startling and reached by too much hard thinking, to meet with wide and easy and immediate acceptance.

## VII.—THE DOCTRINE OF THE SUMMUM BONUM: A CRITICISM.

BY HENRY STURT.

§ 1. The least observant student of the moral philosophy predominant in England just now must have noticed that its teachings are very much at variance with those of the preacher and practical moralist. The tone and phraseology of the one are quite different from those of the other. By the moral philosopher we are told that virtue is the intelligent pursuit of the highest good; while the preacher speaks to us of reverence, of charity, of single-hearted devotion, of self-sacrifice. Nor does the difference of phrase cover an identity of thought. We cannot translate one set of precepts into the language of the other, try as we will. The two parties do differ substantially in their interpretation of the main facts of the moral life.

§ 2. One answer to this reflexion is obvious. "If the philosophers and the preachers disagree, so much the worse for the preachers. On a question of the theory of virtue the expert is to be believed." In ordinary cases this would be a sound answer. On points of theory the theoretic expert is usually to be believed. But here I venture to think it is otherwise. The facts are complicated, and we have inherited a mass of misleading theory. The instinct and experience of the practical man have been truer guides than the teaching of the schools. He has never accepted that unfortunate doctrine of the Summum Bonum which is the subject of the present paper.

§ 3. The classical statement of the doctrine is given by Aristotle at the opening of the *Ethics*: "Every art and every kind of inquiry, and likewise every act and purpose, seems to aim at some good. . . . If then in what we do there be some end which we wish for on its own account, choosing all the others as a means to this. . . . this evidently will be the good or the best of all things." Thus human conduct according to Aristotle has a master-end, which is the Summum Bonum. After much discussion he identifies this



master-end with eudæmonia or happiness. For the sake of a short title I shall call the doctrine of the Summum Bonum eudæmonism.

I shall presently argue that Aristotle's ethical formula is untrue; but, first of all, it is plainly inadequate. There is a great deal of moral conduct which falls outside it. For it has become a truism that righteousness, like unrighteousness, is an inward not an outward affair. It is the character, the self, the soul, the inner life of the actor that we call virtuous or vicious. And character expresses itself but partially and indistinctly in outward action. This is plain from considering a few cases of ordinary experience. We are constantly praising or blaming, rightly or wrongly, the persons or events of history. Let us imagine ourselves hearing an acquaintance express approval of the massacre of St. Bartholomew, or of the career of Cæsar Borgia. Here are moral judgments, exhibitions of character, themselves objects of our moral praise or blame. Where is the good pursued or the evil shunned? But we need not have gone to history for instances. We hear a man say savagely, "How I hate my father," and at once condemn him though we do not suspect him of intending to put his hatred into action. Conversely, we approve a man whose appreciations are well-directed. Such cases show that virtue and vice, the objects of our moral approval and disapproval, need not be the pursuit of a good.

§ 4. But Aristotle's formula is not even true as far as it goes. Any formula which suggests that virtue is the pursuit of a highest good gives an entirely false impression of its nature. Our motives of action may be divided into two definitely-marked classes, self-regarding and unselfish. The fault of all eudæmonism is that it describes morality in terms appropriate to self-regarding action.

§ 5. As my whole argument against eudæmonism depends on the validity of this analysis of conduct, it is necessary to pause a moment to justify it. The distinction between self-regarding and unselfish conduct corresponds to a plain distinction in our life, namely, the distinction between our narrower and our wider interests. The former are connected with our bodies and our lower emotions such as vanity and fear. When we are in the self-regarding attitude we are thinking about these, interested in ourselves in this narrow sense of self, or, if other persons and things do occupy our minds, we are interested in them only so far as they further those narrow interests of ours. On the other hand, in unselfish conduct we are thinking about other persons and

the works of other persons in a spirit of appreciation which, where active expression is possible, shows itself as devotion. Most of our actual conduct is of mixed quality; it is partly self-regarding, partly unselfish. But the two elements are distinguishable on analysis.

§ 6. The precise significance for ethics of this division of conduct is that in unselfish action we have a peculiar feeling of doing what is, in the Aristotelian phrase "fair and noble," a feeling which is wanting in the self-regarding kind of conduct, and is often replaced by the contrary feeling of doing what is ignoble. It is on the ground of these feelings that we say that unselfish conduct is morally good, while self-regarding action is either neutral or bad.

§ 7. It is no weakening of our doctrine to point out that we cannot, within the limits of moral philosophy, explain this unselfish appreciation. Ethics cannot tell us why, for example, we have a devotion towards a friend whom we think to be very much better than ourselves. Even if the fact were totally inexplicable we should have to accept it if we found it in our moral experience. But the truth is that in each of the separate disciplines of philosophy we come upon fundamental facts which that discipline cannot explain, and can only hand over for explanation to the higher co-ordination of metaphysics. It is thus that the theory of art and the theory of knowledge, no less than the theory of morals, bring grist to the metaphysical mill.

But in a final attempt to co-ordinate the main issues of philosophy, the fundamental moral fact would not, I apprehend, give any special difficulty. It is one manifestation of our admiration for fulness and perfection of personal life, parallel in its nature to those other admirations which are the motive springs of art and knowledge. Nor is this devotion to life a strange thing if we believe that the universe beneath its veil of materiature conceals the life of God, who, himself the source of human existence, lives with a life not wholly dissimilar to our own, but carried up to an unimaginable pitch of intensity and perfection. However, our adoption or rejection of this metaphysical line should make no difference to our recognition of the moral fact, which is equally real whether an explanation for it be forthcoming or no.

§ 8. To this explanation we may add that the antithesis between self-regarding and unselfish action is not quite the same as that between selfishness and unselfishness in common language. My phrases embody the same general idea but they are intended to have a more precise and scientific

meaning. Self-regarding action need not be selfish in the dyslogistic sense; it may be only neutral. Moreover we often speak of a man's conduct as selfish where we should not in strictly scientific phrase call it self-regarding. For instance, a man may injure the public service to further the interests of his family, and we may rightly blame him for so doing. But on closer inspection we may see that his conduct is dictated by unselfish motives of a certain kind; though they are not praiseworthy at such a conjuncture.

§ 9. Still less is our antithesis identical with that of egoism and altruism which play so great a part in Mr. Herbert Spencer's ethics. Mr. Spencer's egoism is action directed towards the attainment of one's own pleasure, while altruism is action directed towards the pleasure of others. But unselfish action as I have used the term has, primarily, no reference to pleasure at all; though, secondarily, it is true that pleasure is often involved. When we show devotion to our superiors we generally please them. To define unselfishness as action done to cause pleasure to others is, I venture to think, not only to misinterpret the conception but to degrade it.

§ 10. To the two kinds of action correspond the two main kinds of ethical theory, eudæmonism and what we may call moral idealism. It is characteristic of the former that it interprets morality in terms of self-regarding action; perhaps denies the possibility of unselfish action altogether. While moral idealism, in its various forms of intuitionism, moral-sense theory and duty-theory, sees that morality is essentially unselfish.

§ 11. The lowest form of eudæmonism, the hedonism which puts the highest good in momentary enjoyment, displays its fundamental error most consistently. The upward development of the theory is simply the process of taking in more and more of the truth while keeping the phraseology of error. Aristotle's *Ethics* are redeemed by extensive concessions in this direction. "To the courageous man courage is essentially a fair or noble thing." This might have been written by a moral idealist.

It may startle some to hear T. H. Green classed as a eudæmonist; but it is evident that he was quite captured by the fundamental doctrines of the school which he spent his life in opposing. This is too ordinary a phenomenon in the history of philosophy to cause astonishment. "The common characteristic of the good is that it satisfies some desire."<sup>1</sup> "In all enacted desire self-satisfaction is sought."<sup>2</sup>

<sup>1</sup> *Prolegomena*, § 171.

<sup>2</sup> *Ib.*, § 158.

These two quotations suffice to stamp Green's ethical position. At the same time Green was a man of deep moral insight, and so his pages are full of truths about self-denial and devotion which are totally inconsistent with the framework of his theory.

§ 12. But moral idealism, expressing itself with varying degrees of clearness in its various forms, holds fast to the truth that moral action is in its essence an unselfish appreciation of what is excellent. This faculty of unselfish appreciation, which in active conduct becomes devotion, is not the rare endowment of generous natures, but is common to all rational creatures. It is no sentimentality but the soberest analysis which convinces us that admiration, love, devotion, enthusiasm, all forms of one faculty, are the forces which sustain and animate the fabric of human society. The same principle in other forms is the animating spirit of art, knowledge and religion.

§ 13. Purely negative criticism is always more or less unintelligible because it does not disclose its standpoint. In addition, it is always odious ; because, to the human mind, a theory is a kind of habitation or shelter from intellectual nakedness. We justly dislike any one who pulls down the theory we live in without suggesting another. So I have felt compelled while criticising a false interpretation of morals to indicate however slightly what seems a better one. I will now specify the objections to eudæmonism in their natural order.

§ 14. The first and foremost is that it contradicts self-observation, which is the supreme arbiter in all questions of mental and moral science. If the reader, reviewing his inner personal experience with adequate psychologic insight, can testify that when he feels most decidedly moral his attitude is most decidedly self-regarding, then we have no more to say so far as he is concerned. If his experience is normal the world will agree with him and disagree with us ; if abnormal, he is a deviation from the general human type, and can merely be an object of curiosity.

§ 15. The second objection is that eudæmonism in any form will not work in practice. To the coarser forms of hedonism we need not give a moment's attention. But take any form of Self-Love, however rational and refined, and try to live according to it and the outcome will still be revolting. A man guided by that maxim is one who thinks about his dear self all the time he is acting ; and to think always about self, to guide all by self, is to dry up morality at its root. It is no answer to quote John Mill's observation that the

best way to gain happiness is never to think about it. What you think of *is* your maxim. If you never think about happiness your maxim ceases to be egoistic. Mill's observation is a golden truth, but it gives away the basis of his ethics.

§ 16. Nor shall we find anything more workable in the self-realisation doctrine, a subtle form of eudæmonism which tries to persuade itself that it belongs to another class by quarrelling with its own relations. There is no doubt that the self-realisers belong scientifically to the same type as the utilitarians against whom they fulminate. Both found themselves upon a maxim of egoism. For to explain virtue as self-realisation can only mean that it should be each man's aim to build up an excellent character for himself. This seems to be the import of such formulæ as "Be a person" and "Realise the rational self".

But sometimes we hear it said when this interpretation is advanced, "You must remember that the truest self-realisation is often self-sacrifice". This is either a truism or a contradiction of the plainest deliverance of self-observation. If it only means that one's character is improved by a certain amount of self-denial, nobody will care to dispute it. It is false if it means that in making sacrifices we aim at improving our characters. Has the soldier any such thought when he faces the cannon? The mental attitude of the self-realiser is quite different from that of the self-sacrificer. To take an example from history, no one can seriously maintain that the same spirit animated the calm self-cultivation of a Goethe, aloof from turmoil, and the devotion of his contemporaries who risked everything to deliver Germany from the French.

Thus, if self-realisation means anything more than a vague resolve to be good, it means the cult of character, what Goethe called raising the pyramid of one's existence as high as one possibly can. But this will never work in practice. We have not the space here to detail the reasons why.<sup>1</sup> It must suffice to say that if men really set the perfection of their characters above the performance of their duties, the work of the world would be brought to a standstill and society would dissolve into its elements—which would be suicidal for the self-realisers. If any one thinks the maxim practicable let him try the experiment in his own person and he will find himself sinking into such an abyss of priggery and pedantry that he will be glad to struggle back again, if the importunities or execrations of his friends have allowed him to get very far. But, after all, there is no

<sup>1</sup>They are given in the *International Journal of Ethics* for April, 1898, in an article called "Self-Realisation as a Working Moral Principle".

fear that any one will make the experiment. The real enemy here is philosophic obscurity. No one in this common-sense country would have anything to say to self-realisation if the cloud of hazy formulæ which surrounds it could be swept away. Let it be clearly understood that it means that a man should be always intent on improving and safe-guarding his character, and its speculative popularity is doomed.

§ 17. Eudæmonism is directly against the common ethical experience of men; their moral valuations are evidently made according to a different standard. This may be verified by considering, first, the valuation commonly put upon various moral conceptions; secondly, the valuation put upon various historic characters; thirdly, parallel valuations from other departments of life.

To establish the first of these, little more is needed than to write out a list of those moral conceptions the basis of which is clearly a sentiment of unselfish appreciation and another list of those whose basis is self-regarding, and leave the two, as one may say, to compare themselves. In the former list will be such conceptions as reverence, duty, self-sacrifice, devotion, piety; in the other list self-culture, prudence, self-aggrandisement in all its coarser and finer forms. There is no need to point out which list holds higher rank in common estimation. The place of such conceptions as charity, love, public spirit and patriotism is superficially doubtful; they may be claimed for both lists. Our opponents will point out that the patriot realises his own welfare no less than that of others by his public-spirited exertions. The fact is indisputable but the inference sought to be drawn from it is false. What we must keep in view is the mental attitude of the patriot. Is he thinking about himself or about his country? If the latter, then the results to self are irrelevant to the quality of his action. Doubtless the patriot knows that he is likely to gain by his patriotism, and that knowledge does not diminish his ardour. But if the thought of self-realisation, however refined, is uppermost in his thoughts he ceases to be a patriot.

§ 18. Turn to consider what sort of characters the world ranks highest. Surely they are those who display the unselfish qualities in the highest degree. There is no need to cite the saints and heroes of the past; it is enough to ask the reader to study the people of his acquaintance. In common intercourse how refreshing are the enthusiastic, how lovable are the devoted. On the other hand how intolerably wearying and repellent is the egoist. Pre-occu-

pation with self is not a sin against the Decalogue, but it is the sin of all others which the world has least patience with. Irreproachable morals, great usefulness, high position, learning, genius, even wit are swamped and overwhelmed by this fatal defect. It is easy to be sarcastic about this social fact. "Little people are always affronted by a genius who does not think them interesting". But the world is right and the epigrammatist wrong. Self-centredness may be vice refined of *all* its grossness, but it is vice still.

§ 19. In the other departments of human life, in art or science, we find no less that it is a spirit of self-forgetfulness which wins our highest approval. The artist must not labour at his art that he may cultivate himself, but cultivate himself that he may excel in his art. Here is a phrase from Browning's preface to his *Selected Poems*: "Having hitherto done my utmost in the art to which my life is a devotion". This is the spirit in an artist which the world admires; and it is doubtful whether any other is ever conjoined with a high pitch of artistic production or even acquirement.

So also it is with the man of science. Here is an illustrative quotation: "When one turns to the magnificent edifice of the physical sciences, and sees how it was reared, what thousands of disinterested moral lives of men lie buried in its mere foundations; what patience and postponement, what choking down of preference what submission to the icy laws of outer fact are wrought into its very stones and mortar; how absolutely impersonal it stands in its vast augustness,—then how besotted and contemptible seems every little sentimentalist,"<sup>1</sup> and so on. An edifice of this kind was never reared by men of the self-realising breed.

§ 20. An attack upon eudæmonism is rendered difficult by its long and in many ways glorious history. The appeal to self-observation which must always be the mainstay of its critics seems inadequate against a theory which has held the field so long and has the backing of so many eminent names. Thus in addition to the direct attack a few historical remarks are needed to explain in some degree its prevalence and power.

No doubt it was the first theory to make its appearance because of the practical bent of early speculation. Aristotle states the object of his *Ethics* in blunt language. "Our present inquiry has not, like the rest, a merely speculative aim; we are not inquiring merely in order to know what excellence or virtue is, but in order to become good; for

<sup>1</sup> Wm. James, *Will to Believe*, p. 7.



otherwise it would profit us nothing."<sup>1</sup> The practical drift of Plato's *Republic* is no less certain, though scarce so plainly put. They both wanted to find the best life—the best life in the best city by preference, but, failing that, the best life in such cities as ordinary men had to live in. To put it shortly, the question with the early moralists is: How to be happy?

Now to formulate the question of ethics in an eudæmonistic form is more than half-way towards an eudæmonistic answer. Logically, such an answer is not inevitable. It is possible to ask: What is happiness? or, How can one attain the supreme good? and to state the conditions of attainment without making any concession to eudæmonism. But, as a fact, no writer has ever done this. All who have approached ethics from this side have either failed to give any direct reply to the question: What is virtue? or else have answered it in a more or less eudæmonistic way. It was left for Kant, whose interest in the classics was fortunately small, to strike out a new and better type of answer. But the Kantian influence, though great, has not been decisive. Moral idealism has not altogether fulfilled its early promise. Some of its forms, such as the intuitionism of the last generation, are more likely to repel than to convince the impartial student. And so the *Summum Bonum* doctrine, backed by the enormous force of its classical prestige, on the whole predominates among us.

§ 21. There is another cause which has operated powerfully in modern days, and is well put by Bentham in the passages where he expresses his dislike of what he calls "ipsedixitism". "The various systems that have been formed concerning the standard of right and wrong, may all be reduced to the principle of sympathy and antipathy. One account may serve for all of them. They consist all of them in so many contrivances for avoiding the obligation of appealing to any external standard, and for prevailing upon the reader to accept of the author's sentiment or opinion as a reason for itself. The phrases different, but the principle the same." "One man says he has a thing made on purpose to tell him what is right and what is wrong; and that it is called a *moral sense*; and then he goes to work at his ease and says, 'Such a thing is right and such a thing is wrong—why? Because my moral sense tells me it is.' Another man comes and alters the phrase, leaving out *moral* and putting in *common* in the room of it," etc. Bentham

<sup>1</sup> *Eth. Nic.*, 2, 2, 1.

was a man of rather solitary habits—in practical matters not very closely in touch or sympathy with his fellow-citizens. Notwithstanding this seclusion, or, perhaps, because of it, he was an ardent practical reformer, violently, and on the whole justly, discontented with the legal and political institutions of his native country. And in the task of planning and advocating he brought a keenly logical and sceptical intellect to bear, impatient of everything that looked like unwarranted assumption, and eager to bring everything to the test of objective measurement. A man with this type of mind would have many difficulties about a moral-sense doctrine of ethics. He would question the very existence of a moral sense, inasmuch as he could discern no agreement among its various so-called pronouncements. He would point out that it offered no criterion for practical reform, indeed was cited in defence of every abuse by the party of obstruction; so that for these practical purposes resort was necessary to an objective, definitely ascertainable standard, like that of pleasure and pain. These are powerful objections to the moral-sense doctrine. They can only be met by insisting on a fact which Bentham in his seclusion was ill fitted to appreciate, namely, that there is a substantial unity of principle in men's moral judgments enough to justify one form of the doctrine which he rejected.

§ 22. Thirdly we must take account of a yet subtler influence, one which does not come into play till that stage of philosophical development when the "ideal scepticism," as Reid calls it, appears upon the scene. According to the subjective idealist argument a man is shut up within his circle of impressions and ideas; and, as Hume explains to us, can never get out of it into the objective world save by an assumption more or less illegitimate. Now this is totally irreconcilable with that unselfish appreciation of excellence which I have suggested to be the essence of morality. If we suppose an almost inconceivable case and imagine a subjective idealist who made devotion to his own perfections the guiding principle of his life, that devotion would be something quite different from the moral devotion of ordinary men. Morality is a principle of objectification; to act morally is to declare a belief in one kind of non-subjective existence.

I admit that every variety of the moral-sense theory is not equally irreconcilable with subjective idealism. We can imagine a subjective idealist who believes he has a moral sense which tells him which are better and which are worse among his subjective motives. But then the em-

barrassing questions arise, Where does this moral sense come from? and Why should the individual listen to it? Thus we see it is perfectly consistent that among thinkers who have a tendency to subjective idealism in metaphysics there should be equally a tendency to eudæmonism in morals. Their argument is plain. Granted that a man is shut up within the circle of his own impressions and ideas, that is no reason why he should not try to make himself as happy as possible. In fact his loneliness is the strongest reason for a purely self-regarding line of conduct. He has no one to consult or consider but himself.

§ 23. One cause of the present popularity of a form of eudæmonism akin to Aristotle is matter of hearty congratulation. The end of the century has been notable in this country for a remarkable and beneficent growth of the civic spirit, a recognition of national and social unity, a keenness to take a share of civic duties and privileges, both in the wider spheres of the Empire and the nation, and in the narrower spheres of the town and neighbourhood. Now this is like the spirit which we find in the great thinkers of Greece—one of the most valuable lessons they have to teach us. The *Republic* and *Ethics* are penetrated with the conviction that the state should be organically one. The eudæmonia which they describe and teach men how to attain is emphatically civic. There being so much kindred between their spirit and that of the best men of our day, it is no wonder that modern moralists have so largely adopted classical forms. After presupposing that morality is the pursuit of a good, they argue that this good is realised by man's performing his function, his *ἔργον*, which they thereupon identify with his civic duty. In other words man must "realise the social self". The content of this moral system is noble; but it is totally inconsistent with the eudæmonistic presuppositions at its base. It is a well-meaning attempt to pour the new wine of modern civic devotion into the old bottles of Hellenic ethical formulæ.

§ 24. Lastly, though here, to be sure, we have a very subsidiary cause of acceptance, some forms of the Summum Bonum doctrine make a vast claim on the imagination. "Ethics is the science of the ultimate end or ideal of human life"—how impressive such phrases sound to an unpractised ear! They suggest mankind striving, blindly, confusedly it may be, but still striving towards a master-end—a supreme blessedness which gives each separate act its value, and life as a whole its consistent meaning. And the moralist is the sage who comes down and makes that striving clear-sighted,

defines the supreme end, and sets it plain before human aspiration. Truly a magnificent function for ethics and a magnificent position for the moral philosopher. He is promoted to be guide of mankind and professor of the science of life.

§ 25. All the more noteworthy is it, as was remarked at the beginning of this paper, that the practical men, the preachers and philanthropists have nothing to say to these mighty claims. You never hear a preacher talk thus of the supreme good or undertake to tell us what it is. His language is pervaded by quite another tone.

§ 26. The fact is that the conceptions which lie at the root of eudæmonism are totally inconsistent with the spirit of the practical morality of the modern world. Between the ethical spirit of pagan and of Christian ages there is a most important and evident difference. Of course the essence of moral practice has always been the same, but the language in which men have spoken about it has been very different in the two ages. There was a much stronger eudæmonistic tone in the old world than in the modern. I am not in the least trying to appeal to theological prejudice when I call such conceptions as *Summum Bonum*, self-realisation and goodness-as-health-and-beauty pagan conceptions; and conscience, duty, self-sacrifice and devotion Christian conceptions. I am only trying to make a distinction which cannot conveniently be indicated in any other way. There is no term but "Christian" to express the general spirit of modern morality, the outcome of the centuries of moral experience and experiment which divide us from Hellenic civilisation. Now modern experience has decided that the pagan conceptions, though very important, are secondary to the others. It is the fault of eudæmonism that it reverses their relative position. Among the materialistic eudæmonists this may be explained by an obtuseness to spiritual facts; among the idealistic eudæmonists by an excessive admiration for the Age of Pericles. In this latter form the *Summum Bonum* doctrine is a recrudescence of paganism.

## VIII.—DISCUSSIONS.

### PERCEPTION OF CHANGE AND DURATION—SOME ADDITIONAL NOTES.

THE following short notes, based upon certain considerations put forth by Dr. Stout in the January number of *MIND*, may, perhaps, be not altogether out of place. Dr. Stout there refers to three classes of experiences—temporal perception, comparison, and the apprehension and recognition of 'form-qualities'. The present paper aims at drawing certain general distinctions; and in so far as it deals mainly with comparison, it somewhat belies its title. Further, no attempt is made to give a scientific account of the mental processes at the bottom of these experiences; nothing is undertaken beyond the preliminary task of ascertaining what is present in consciousness when we apprehend succession, compare, etc. It remains an open question whether the conscious or apparent factors are a true report of the real process. From the purely introspective method pursued there follows a possibly offensive predominance of the first personal pronoun. This seems to be unavoidable, but it must be understood from that very predominance that the value to be attached to distinctions drawn below is purely temporary. The final verdict must rest with those who have the opportunity to observe themselves under the accurate and repeated conditions of experiment. Hence, too, no figures are given; and as the papers containing the figures of various experimenters are so well known, it is unnecessary to give precise references.

1. *Temporal perception.*—(a) The view of Duration that Schumann takes the trouble to overthrow can scarcely be considered serious psychology, for it commits the long-branded mistake of substituting a mathematical moment for the empirical or psychical present. (b) With regard to succession and change, it seems quite plain that when presentation B follows presentation A at a moderate interval, no memory-image of A *need* be present when we apprehend A to enable us to experience change. It may be present, but its presence is not essential. Nor is it evident that the *a priori* argument to the contrary would have cogency, for the simple perception is not a consciousness of change from A to B, but a mere 'change-consciousness,' as Dr. Stout well terms it.

Such simple change-consciousnesses in all their primitive simplicity are not uncommon, but they are apt to be overlooked because their vagueness renders them useless for the purposes of accurate thinking or practical doing. They are characteristic of our lazy times; but in our times of purpose and pursuit they are not the direct objects of our attention. Either they have acquired a definite meaning in the usual way of acquirement of meaning, so that this change-experience means the change from A to B and that the change from C to D, this the succession of two raps and that the succession of three, and then it is the meaning which has interest for us; or, where the meaning is not clear, we make use of reflective comparison,—of which more must be said presently. Here a word must be added as to the case when B follows A with great rapidity. Mr. Shadworth Hodgson asks in the last number of *MIND* (p. 242) whether “Dr. Stout’s two eminent German authorities have made it impossible to suppose that we can ever in immediate perception hear, say, a postman’s double rap, or distinguish it in immediate perception from a single rap”. The answer is that, if the postman raps quickly enough, the two knocks would fall within the same psychical moment or present, that is, within one apprehension; and they would be distinguishable from a single knock, not because the first rap is present as a memory when the second is apprehended, but because the total impression differs.

2. *Relations of Intensity or Quality.*—The difficulty of comparing successive presentations A and B seems to depend upon three factors, the actual amount of difference between A and B, our purpose in comparing them, and the time-interval between them. The difference between A and B varies from ‘nil’ through the just-noticeable upwards; our task may vary from simply judging ‘equal’ and ‘different’ to assigning a position to the different, such as ‘stronger’ or ‘weaker,’ ‘higher’ or ‘lower,’ etc.; and with regard to the time-interval, too rapid a succession flurries us, whilst too slow a succession may make comparison altogether impossible. Granted a suitable rate of succession, the easiest task is, of course, to judge as merely ‘different’ a more than noticeable difference, the hardest to assign a position to one that is only just noticeable; and between these limits are many grades of ease and difficulty. Now if we leave aside the case where A and B are judged equal or the same, it seems *a priori* probable that the mental processes involved in judging difference will vary with the difficulty of drawing the comparison. Whether this is so only those can finally decide who have subjected themselves to a long course of self-observation under conditions of experiment, and in saying that it does seem to me to be true, I speak with a full knowledge of the weakness of every-day observation in regard to these fine points. However, from such rough tests as I have been able to apply to myself, I incline to think that—at any rate in my own case—the facts are somewhat as follows: (1) When the task

is easy, presentation A need not be present as a perception or memory-image simultaneously<sup>1</sup> with B. This is quite plain in ordinary life; if one is shown first a cabinet photograph and then a life-size painting, the judgment of the latter as 'greater' seems to 'go off of itself' without the presence of a memory-image of the photograph. And on this point most experimenters are agreed. Schumann's verdict has been quoted by Dr. Stout; an equally decisive passage from Wundt may be found in the *Phil. Stud.*, vii., 229, where after opposing Schumann's interpretation of the experiments on the span of consciousness (a difficult point that may be avoided here) he says, 'Eine unmittelbar anschauliche, d.h. nicht durch successive Addition der Theile und discursive Reflexion vermittelte, Vergleichung ist möglich und wird in unzähligen Fällen von uns ausgeführt, wenn von zwei complexen Vorstellungen A und B nur jede für sich als ein simultanes ganzes im Bewusstsein war,' and the condition that A and B should be present at once is 'nicht erforderlich'. The passage refers to complex ideas only, but the principle may be applied throughout. It would perhaps be better to avoid the word Comparison altogether in these cases, except that a term is not easy to find which shall cover not only the cases where we judge 'different' but those where we assign a position. (2) As decision grows more difficult the mental process grows more complex, and finally I at least find a memory-image very necessary. Only it is not always a memory-image of A itself, but of something that does duty for A. This is a possibility which Dr. Stout has not mentioned. It can hardly be doubted that the mind does not always take the high road to its end; very often a by-path is preferred, and that perhaps not always a short cut. For example, in comparing two sound intensities A and B which are near the difference-threshold and do not follow one another so rapidly as to fall within one apprehension, I generally make use of a memory-image, not of the sound A, but of what I can only describe as the total 'shock' or impression produced on me by that sound. This shock is one of those experiences that are more easily verified by the reader in himself than analysed; it is not a simple sensation nor a simple feeling (certainly not a feeling of the pleasure-unpleasure series), but as it is ascribed to the subject only and not at all to the object it should perhaps be called a complex feeling. It may be asked whether this shock is compared with B simply or with

<sup>1</sup> It might be argued that A and B cannot be present in consciousness absolutely simultaneously and yet be recognisably two. But this is a confusion of consciousness with the 'Blickpunkt'. Attention is *fully* fixed only on A or B at once, but so far as may be it remains master of the other at the same time. Cf. Stout, *An. Psych.*, vol. ii., p. 165; Wundt, *Logik*, vol. i., p. 58. But it is curious to notice that in some comparisons of spatial figures or forms—e.g., of lines—there seems to be something like superposition. In these cases attention is mainly fixed on the difference.



the shock occasioned by B. If it suffices to compare the memory-image of this symbol of A with the percept B during the actual perception of B, then I should say that no very strict differentiation of the actual sound-intensity B and the subjective shock takes place; but the comparison is rather with the shock than with B itself. However, such conditions seem to be rarely realised in cases of difficult comparison; rather, we take time to consider the matter before answering. The result is that B itself, if caused by a momentary stimulus, passes away, and then I have no doubt that the memory-image of the symbol of A is compared with the memory-image of the symbol of B. Indeed, I notice a tendency in very hard cases to imitate the shocks by other means, *e.g.*, by movements of the lower jaw, head, or hand, but never any attempt to imitate the sound-intensities by rapping on the table or the like. This is probably due to a very defective auditory memory, but much the same occurs elsewhere. As a rather different example I may cite the case of voluntary movements. In experiments on such movements of the arm carried out on Störing's apparatus,<sup>1</sup> the simplest manner for the blindfolded subject to decide whether one flexion or extension was equal or not to another would seem to be a direct comparison of the series of so-called 'movement-sensations'. As a matter of fact, these were never except in very large movements the *conscious* factors that determined my judgment, nor indeed could I by any amount of effort distinguish these sensations as a rule; but I made use of various complex ideas of direction, distance, position, etc., and the ideas that were most prominent in movements on one part of the apparatus were often least prominent in other parts. This seems to be a case where, to judge from what is actually present in consciousness, a roundabout way is preferred to a short cut. Thus, whilst subscribing to Dr. Stout's theory as a whole, I should like to venture a generalisation from my own case and give the statement a more precise form, as follows: The apprehension of a presentation B as different from a previous presentation A does not necessarily imply the coexistence in consciousness with B of a perceptual or memorial image of A. If B follows A with sufficient rapidity, they fall within one perception and so are present together. Otherwise A is usually not present if the difference is easily apprehended. But when the comparison can only be effected with difficulty—*i.e.*, when there is true comparison—it usually happens either that a memory-image of A itself is compared with the percept B or with a memory-image of B, or that a memory-image of some experience that is recognised as standing as a symbol or formula for A is compared with a similar formula for B or with the memory-image of such a formula.

<sup>1</sup>The apparatus is described in *Phil. Stud.*, xii., 475. The experiments mentioned were under Dr. Störing's leadership, and as his account of them has not yet appeared, an apology is due for this previous, though very cursory, mention of them.

A word as to those cases where we judge B to be the same as A. These are cases of Recognition, and they are marked by the feeling of Recognition or Familiarity. But this feeling, though it may be prior to the judgment, can scarcely be the conscious condition of it, for it must itself rest upon the same conditions as the judgment. Leaving it aside, then, we find that recognition is ordinarily easy; we also find few to maintain that it implies the comparison of a distinct memory-image  $a$  of  $A_1$  with the present percept  $A_2$ ; and so far our general view finds support. But do we in cases of difficult recognition use comparison proper? It might indeed be asked whether recognition with difficulty is possible, whether, *i.e.*, when we have got below the least noticeable difference we do not necessarily judge 'equal' or 'the same' with equal ease. But in simple cases such as sound intensity or tone-pitch, even if we disregard the relation to this matter of the 'undecided' judgments that occur about the difference-threshold, we cannot fail to recognise that the time-interval between  $A_1$  and  $A_2$  influences the result greatly, and I should be inclined to say that as the interval increases beyond the point of easy recognition the tendency grows to make use of a memory-image of  $A_1$ . Certainly this is so in the complex cases of ordinary life, where, *e.g.*, we recognise a comparative stranger after some lapse of time. In these cases, of course, the question of what differences are important and unimportant complicates matters; but in general it seems that the more uncertain the recognition is, the greater the tendency to use memory-images.

3. With regard to cases like that of a melody, it seems on the whole better to exclude them from the present discussion. Meinong of course gives his position away in saying that "zum Vorstellen einer Melodie das gleichzeitige Vorstellen sämtlicher sie ausmachenden Töne unerlässlich erscheint". A theory that demands so much as that is too unconscionably importunate. But it is not without reason that Schumann has objected to the use of these very complex examples, with regard to which very different views might be held, none of which would necessarily injure our previous contentions; *e.g.*, the chief importance may be attached to feelings, and even then subsequent differences of opinion are possible. For one tersely and forcibly put view *cf.* Lipps, *Ztschft. f. Psych.*, etc., xxii., 384.

T. LOVEDAY.

## IX.—CRITICAL NOTICES.

*Einführung in die Philosophie der Reinen Erfahrung.* Von JOSEPH PETZOLDT. Erster Band. *Die Bestimmtheit der Seele.* Leipzig: B. G. Teubner, 1900. Pp. 354.

It is always a matter for congratulation when a new and interesting movement in Philosophy finds an adequate interpreter. The philosophy of Avenarius has found a most admirable interpreter in Mr. Petzoldt. He has succeeded in disengaging what is really vital in that philosophy from all that is merely accessory, and in setting it before his readers in the clearest possible light. Not that we are spared the terminology that makes the master-work—the *Critique of Pure Experience*—at first sight so forbidding, but we are introduced to it and led through it in the kindest possible way.

It would be a mistake, however, to suppose that the present volume is a mere introduction to the philosophy of Avenarius, or a mere exposition of the principles of the *Critique*. It consists of two parts, the first of which is devoted to developing the main idea which gives unity to the work of Avenarius, and the second to a critical exposition and extension of Avenarius's philosophy as embodied in the *Kritik der Reinen Erfahrung*. Other parts, moreover, are to follow in a second volume, which we are to expect in two or three years' time. They will be concerned primarily with the exposition and application of 'a principle of very great generality and fruitfulness dominating all the processes of nature and spirit'; whilst the last part will be devoted to the statement of the fundamental view of the world which is characteristic of the Philosophy of pure Experience.

It is impossible not to take a genuine interest in such a programme, and the interest with which one starts the reading of this first volume is heightened from the very outset by the lucidity of the writer's style. Mr. Petzoldt is essentially a conscientious thinker, and as he is never slovenly in his ideas he is always clear in his expression.

It was with much regret that I discovered I was at complete variance with the fundamental principle upon which this whole new philosophy is built—the principle which concerns the scientific explanation of psychical processes, and the conditions of their intelligibility; and yet this did not in any way diminish the interest with which I read the remainder of the book. It is a

work which cannot induce any feeling of irritation. However radically one may disagree with the position of Mr. Petzoldt, there is no after-vexation due to the feeling that one has been worrying over difficulties that are mere confusions and nothing more. Whether one agrees with the exposition or not, one cannot but feel that one's own convictions are made more clear to one's self by means of it.

The conviction that psychical processes cannot furnish their own explanation, but can be unequivocally determined only through their dependence on brain processes that *can* be determined, is the soul and inspiration of the new movement, of which the late Dr. Avenarius is the chief exponent. Avenarius, says Mr. Petzoldt (p. 350), was the first to feel deeply the need of bringing the movements of the mind under the firm control of a genuine science. He became convinced that the attempt to understand psychical events by referring them to other more familiar psychical events was futile. It could result at best in the establishment of certain uniformities (*Regelmässigkeiten*) that were constantly being broken, but never in the establishment of laws. The only genuine explanation, the only form of explanation that could make psychical process scientifically thinkable must be such as to show *in detail* the absolute determinateness of the process. So long as the slightest vestige of indeterminateness remained, there could be no science of Psychology. This was the conviction of Avenarius.

A very clear and striking statement of the way in which one is to convince one's self of the truth of this conviction and fall irresistibly into line with Avenarius is given in the first introductory part of the present volume. It consists essentially in the following argument: The only intelligible principle of explanation is that founded on the thoroughgoing unideterminateness (*eindeutige Bestimmung*) of events. Such unideterminateness is not anywhere traceable within the mental sphere. Mental processes must, therefore, either remain permanently inexplicable or be explained through their connexion with material processes, for these alone proceed unideterminately. As all known facts agree in showing that the only material processes in immediate relation with psychical processes are the processes of the brain, it follows irresistibly that if there is to be a science of mind at all, psychical processes must be conceived of as the dependent concomitants of brain processes, and receive their unideterminateness through their connexion with these. This is not materialism or any other "ism," urges Mr. Petzoldt in conclusion. It is a simple fact, for if it be not a fact, then mental science is an illusion.

Such is Mr. Petzoldt's startling but clearly defined attempt to set up the doctrine of psycho-physical parallelism as the fundamental incontrovertible fact of mental science. Let us now examine this attempt more closely. Mr. Petzoldt asks us to focus our attention on some single psychical event and to ask ourselves how we intend understanding it. The ready answer will no

doubt be given that it must be understood as the effect of certain causes. If so, proceeds our author, the causes must be of a psychical kind, for the idea of a physical cause bringing about psychical effects has long ago been exploded. On the assumption that we acquiesce in this Mr. Petzoldt proceeds to enlighten us. He attempts to show (1) that the facts upon which the time-worn principle of causation is founded do not justify us in admitting more or less than the undeterminateness of all that happens; (2) that the psychical states being non-undeterminable by each other, the attempt to make them explain one another is scientifically unthinkable; (3) that the only way out of the difficulty is to accept the doctrine of psycho-physical parallelism in the sense of Avenarius.

The causal idea in its old form is, according to Mr. Petzoldt, quite untenable. Taking a concrete example, that of the fall of an avalanche, our author shows how the attempts to define the causal relation more closely, first by distinctions into direct causes and indirect conditions, then by analysis of these into their component factors, are doomed to failure on account of the *continuity* of natural events. It is impossible in short to give a clear, sharply-defined meaning to the terms *cause* and *effect*. Science is therefore bound to forsake these concepts and this it does the more willingly when an inquiry into their origin shows them to be in all their aspects mere relics of animism. Of these aspects that of necessary connexion between cause and effect is the most important and misleading. It is a mere anthropomorphism. The necessary is in fact a bewildering expression for the actual and nothing more.

In consequence of the complete unsatisfactoriness of these causal concepts Mr. Petzoldt starts an inquiry into the nature of the facts upon which they are based. This fact he finds to be simply the following, that every natural event is fully determined in all its parts. It is in giving precision to this fundamental statement that Mr. Petzoldt reaches the central conception of undeterminateness.

He first of all takes a number of examples by way of illustration and shows by means of these that whenever there are a number of possible ways in which, say, the movement of a body would be directed, that part is selected, as a matter of fact, which possesses the following three elements of undeterminateness: (1) singleness of direction, (2) uniqueness, (3) continuity, for in satisfying these three conditions all indeterminateness is taken from its changes. The meaning of the first determining element is simply this that as a matter of fact there is no *actual* ambiguity as to the sense in which any change takes place. Warm bodies left to themselves always grow cooler; heavy bodies left to themselves always fall downwards not upwards. A first conceivable ambiguity is thus put to rest by Nature herself. In the second place Nature takes care that bodies shall move in such a way relatively to their *Bestimmungsmittel* or media of determina-



in this way; and (2) that if they did the fact of the unity of consciousness would be inexplicable.

The proof of the first point is much simplified by the fact that the direct determining means of a mental act are to be found only in the *immediately* preceding mental acts (p. 65). Mr. Petzoldt shows that there is no such thing as the determination of psychical states by their immediate antecedents. Indeed all the elements requisite for such determination are lacking. There is no *continuity* in the mental life. For continuity to exist (p. 60) two members of a series must become more like each other the nearer they are to each other within the series, and the successive parts of the series must pass imperceptibly into each other. Now the mental life is just made up of sharp transitions (*ist geradezu aus lauter Plötzlichkeiten zusammengesetzt*), and resembles nothing so much as the changes in a kaleidoscope. This discontinuity is implied in Weber's law. As the stimulus is continuously increased, we become conscious only at discontinuous intervals of differences in sensation. 'It was a complete misconception of this relation,' says Mr. Petzoldt (p. 60), 'when Fechner transferred mathematical symbols and methods devised to interpret the continuous changes of mathematical functions to the interpretation of discontinuous psychical changes.'

Further, mental processes are not bound down to a single direction. Such singleness of direction is found only when a natural process left to itself invariably takes place only in one of two equally thinkable opposite directions. But we can repeat the number-series backwards almost as fluently as we can repeat it forwards. As for *uniqueness* of determination, even in strictly logical thinking as in the attempt to work out a problem of Euclid, or to deduce the conclusion from a syllogism, one idea does not call forth without fail some one idea and no other. There is a certain dependence here no doubt between the successive ideas, but it is not undeterminate. In the associations of fancy and imagination there is still less undeterminateness. Two associated ideas may, as a rule, appear in consciousness together, but it cannot be said that the one determines the presence of the other according to a law.

There is then neither continuity, singleness of direction, nor uniqueness in the sequences of the mental life. This is the direct testimony of the facts themselves. As a very strong indirect witness to the same conclusion we have the fact that the unity of consciousness is incompatible with the notion of this undetermination of one state of consciousness by another. By unity of consciousness Mr. Petzoldt means the continuous time-identity of the individual consciousness. It consists in the recognition of my previous experiences as *mine*. This recognition implies that any idea can appear in consciousness either simultaneously with any other idea or percept, or immediately before or after it. For an idea or experience can only be said to be *mine* so far



as I am able to revive it at any time in immediate juxtaposition with any other idea I happen to have in mind at the moment. Mr. Petzoldt has then reached the following conclusion, that no psychical act can be understood from a consideration of the psychical acts immediately preceding it, and this leads him at once to the main result of all this preliminary inquiry. These psychical acts must be determined *somehow*, and as they cannot be determined by mental determining-means, they must be determined by material determining-means. Psychophysical parallelism of the strictest kind must be accepted as a fact or the science of mind be forsaken as a fiction.

As mental processes can only be scientifically understood in the light of brain processes, it follows logically that we can understand the life of mind only in so far as we have understood the life of the brain. This startling inference is accepted in these very terms by Mr. Petzoldt (p. 90). The Psychologist has two fundamental tasks before him. Firstly, to investigate the life of the brain itself as it exists within its material surroundings, and quite independently of its connexion with the mind; and secondly, to show in detail how the various psychical processes can be scientifically understood through their dependence on the processes of the brain. These tasks were undertaken for the first time by Richard Avenarius. The first problem he solves in the first volume of the *Critique*, and in the second volume he solves the second.

It is at this point no doubt that the reader who is not already familiar with the work of Avenarius will have his interest and curiosity excited in the highest degree. He will naturally expect, first, some brilliant physiological or biological discovery; and then, founded upon this, some equally impressive solution of the relation of Body to Mind—none the less acceptable for being previously unimaginable. But all this is vain expectation. Avenarius did not make physiological discoveries, and he is no nearer than was Spinoza to the solution of the great enigma. Avenarius was a psychologist. His theory of brain-processes is a mere translation into material terms of his theory of mental processes, and alas! to any one who, despite all the arguments of Mr. Petzoldt, still believes that the mind contains its own principles of determination, this whole laborious, ingeniously-elaborated translation is completely superfluous.

To justify this disillusionment, we need not go beyond Mr. Petzoldt's own statements. For on page 93 we read that the two great discoveries in question were made by Avenarius as a result of an unprejudiced investigation not of cortical but of mental processes. The discoveries in fact were of a purely psychological nature, and as such they are both very interesting in themselves and very thoroughly worked out by their discoverer. The first is the discovery that our psychical life at any moment consists in the play of a number of more or less easily distinguishable

processes of conscious activity to which he gives the name of Vital Series (*Vitalreihen*), but which we should prefer to call, with Prof. Stout, interest-series. The second is the discovery of a new and simple principle for classifying and interpreting the tangled maze of mental phenomena. Avenarius superseded the familiar distinction of states of consciousness into sensations, cognitions, feelings, volitions by the much simpler and more general division into Elements on the one hand and Characteristics (*Charaktere*) on the other.

These two discoveries taken together, adds Mr. Petzoldt, lead to the discovery of the true biological meaning of the central nervous system (p. 93). How it should do so is, of course, perfectly inconceivable. Wundt's criticism that these translations of psychological fact into the terms of Biology are of no use either to Psychology or to the Physiology of the nervous system, that it is a purely formal schematism that could be applied to Herbart's '*Realen*' just as effectively as to the vital processes of the brain seems to me quite irresistible. It is only on the assumption that mental processes are inexplicable except through the determinative intervention of purely physical processes that the hypothesis of these organic *Vitalreihen* can be in any way justified. It is in every ordinary sense an illegitimate hypothesis. It professes to be a biological hypothesis, and yet it is framed not to fit the facts of Biology, but in the interests of Psychology; it is further, so far as our present knowledge of the brain goes, completely unverifiable. Were it absolutely imperative to find for Psychology some determining ground outside the facts of the mental life, it would be welcome, and very welcome, as a temporary piece of scaffolding, and this is, of course, the consideration that makes Mr. Petzoldt's position intelligible. But we have yet to determine whether Psychology is not more independent than Mr. Petzoldt seems to think. For what after all is the force of our author's long argument in proof of the indeterminateness of psychical activity? Does that which he *has* succeeded in proving really prove his point? I cannot see that it does. It has shown us that one psychical state cannot be said to determine the state that immediately succeeds it in the same way as the position of a moving body at any moment is determined by the position it occupied at the previous instant. This is perfectly true, as his careful argument clearly shows. But this only proves that psychical states as Mr. Petzoldt conceives them cannot determine each other as Mr. Petzoldt would have them do. We should be prepared to contend both that Mr. Petzoldt does not approach the facts of Psychology in such a way as to do justice to them, and that to be scientifically determinable a psychical fact need not be undeterminable in the sense of Mr. Petzoldt. Let us first try and see what the precise psychological attitude of Avenarius and of our author really is.

Mr. Petzoldt holds that the most important psychological dis-

covery of Avenarius was that every psychical event, even the most rudimentary (p. 96), consisted in a psychical series that had a beginning—some disturbance of psychical equilibrium—a middle—a series of movements or means for remedying the disturbance—and an end—the re-establishment of the mental equilibrium (p. 305). Such an event constituted a *vital series*, and the mental life was nothing more nor less than a wondrously complex inter-branching system of vital series.

Avenarius explained his meaning fully both by presenting each of the three sections of the series in a vast, almost bewildering, array of psychical lights (pp. 96-98), and also by means of a number of concrete instances. Here is one out of many: "B wants to go out while it is still raining, but cannot find his umbrella in its customary place—series opened. He looks for it in all likely or possible places—middle terms of the series. Finally he finds the umbrella—series closed." The reader does not require to read through all the many instances of this kind given by Mr. Petzoldt to convince himself that Avenarius had here got hold of a very real psychical fact. But no sooner has he got firmly fixed in his mind the conception of the psychical unit as a series, the members of which are knit together by a single tendency or interest, and is beginning to become enthusiastic over it, than there begins that disappointing process of disillusionment which, according to Mr. Petzoldt, constitutes the crowning merit of Avenarius's work. The first step in this process consists in shifting the centre of importance from the psychical to the parallel biological series (p. 98), until the reader finds that the main result reached is not that the essence of the *psychical* life consists in an incessant stirring to appease an appetite, put away a discomfort, satisfy an interest, or work out some problem or end, in a word, to answer questions, practical or theoretical; but that the essence of the *life of the brain* consists in warding off whatever threatens its state of equilibrium (p. 108).

The full force of this transference is not felt at first. For the next step, and the main step, consists in a prolonged process of psychological analysis, the issues of which are not clearly traceable at first. The object analysed is the vital psychical series, and the immediate aim of the analysis is to discuss the *parts* and *aspects* of such a series—its fundamental forms, in fact—and to classify these in an orderly and comprehensive system. This is of course an excellent procedure, and its accomplishment, in detail, by Avenarius, is a valuable contribution to Psychology.

But if the reader fondly expects, as the natural sequence of this analysis, a synthetic reproduction of the psychical life, he is fond indeed. A skilled analyser like Avenarius can not fall, we are told, into the old blunder of explaining a psychical act or a synthesis of psychical elements as an atomistic Psychology might be expected to do (p. 270). What he does is to renounce psychical synthesis altogether as beyond the reach of Science, and

transfer the synthetic, unifying function from the psychical to the biological vital series. The Avenarian Biology is of course not the Biology of the Biologist. It consists simply and solely in the persevering application of one hypothetical principle—that the life of the brain, namely, consists in a perpetual warding off of whatever troubles its equilibrium—not so as to interpret any single biological fact, but only so as to give intelligibility, that is unity, to the psychical life. For that is what this whole twist of method comes to. Had Avenarius believed in the existence of anything that could be called a synthetic Unity of Consciousness, something psychical that could enable us to trace true psychical development in psychical change, we should assuredly have heard less of Biology. But he holds that it is only the unity and continuity of the biological vital series that can render intelligible the discontinuous succession of the psychical vital series, the only imaginable form of *psychical* synthesis being that of the rope of sand.

On such a crucial point as this Mr. Petzoldt does not allow himself to be misunderstood. The only psychical unity he will allow within the psychical life is the unity, not of a psychical process, but of a psychical act. Each psychical act exists as it were in solid singleness, like the indivisible soul of mediæval philosophy. It is a unity without parts. A psychical act, say a perception, cannot be divided into component parts like some material thing (p. 258); in itself it is one and indivisible, it is analysable only by thought, and the parts into which it is thus analysed are mere *Abstrakta* (p. 337), and only exist for thought. As for psychical *process*, a process, that is, showing psychical growth or development, there is no such thing (p. 278). What is characteristic of the psychical is its discreteness and discontinuity (p. 166). The process is a mere mosaic laid in Time (p. 278), and as we must logically add, though Mr. Petzoldt does not make the inference, Unity of Consciousness is a vital or organic fact, not a psychical fact at all.

This whole procedure of Avenarius, as defined by Mr. Petzoldt, finds its explanation in the presupposition from which he starts. Having convinced himself that psychical processes cannot determine each other he is not tempted for a moment to seek for a principle of synthesis within the psychical series which he analyses, but considers the analysis only as the means for discovering the true biological syntheses. It is Hume over again, but with this difference, that whereas Hume abides by his first error and accepts all its consequences, Avenarius seeks to remedy the first error by a second. Their common error, as I take it, is in starting with what is in essence an atomistic conception of the psychical life, the error peculiar to Avenarius is that of seeking to superinduce upon the discontinuous atoms of this psychical life a synthetic principle of unity, hypothetically borrowed from elsewhere.

The only way to avoid Hume's sceptical conclusions and the thoroughgoing materialism of Avenarius—veiled, but only veiled, by his protest against all 'isms' whatsoever—is to start with a truer and more living conception of the facts of the psychical life. The ultimate psychical fact, however one interprets it, is the Unity that marks one's interests and endeavours, and not the fragmentary part or phase of such an interest or endeavour. The psychical unit, I am bold to say, is, in last resort, the psychical organism. For a 'psychical process' is merely an abstract expression for a modification of the activity of the self. No Psychology can be the psychology of mental processes in the abstract, but only the psychology of the mental processes of the individual.

Such an obvious fact is not likely to be overlooked, and Mr. Petzoldt certainly does not overlook it (p. 76). He holds the Unity of Consciousness, by which he means the continuous time-identity of the 'me' to be a fundamental or original fact (*Eine ursprüngliche Thatsache*). Now this confession should logically have led to conclusions very different from those to which Mr. Petzoldt leads us. For our author tells us (p. 44) that one cannot ask the 'why' of an ultimate fact: it must be accepted as pure actuality and nothing else (*Für letzte Thatsachen giebt es kein Warum*). Now since we cannot see any essential difference between an ultimate and an original fact, we should expect Mr. Petzoldt not to question this fundamental fact of the Unity of Consciousness, but simply to set about discovering how the Unity is to be conceived in order to prove fruitful in the explanation of mental development. But instead of this we are started on a shadowy chase after metafundamentals. We are told that the very possibility of this Unity requires the non-unideterminateness of psychical states, that this non-unideterminateness is its logical *a priori*.

If this is to mean anything at all, it can only mean that the Unity of Consciousness must be conceived as *actually* possessing this peculiar property, namely, that its mode of unifying mental processes is not through the agency of physical undetermination. In this I would perfectly agree with Mr. Petzoldt. Unidetermination of this physical kind is to my mind perfectly incompatible with any form of self-determination, where by self-determination I mean the power of choice and of control, the power to select and to reject, in a word, the power to be guided by one's ends and interests instead of being pushed from behind by some inevitable actuality. But the undetermination of one psychical state by another is one thing, the undetermination of psychical process by some interest or final cause with which the self has for the moment identified itself is quite another. It is in this latter sense only that the Unity of Consciousness can be said to provide a principle of determination for the otherwise disconnected facts of the conscious life. That there are great difficulties in the way of

any attempt to show how Unity of Interest or Endeavour can furnish a synthetic principle of determination for the psychical process whereby that interest develops or that endeavour realises itself is undeniable. But just in so far as we can detect unity and continuity in the mental life—as we can do in all attentive processes provided we do not use these fundamental ideas too abstractly—to that extent we have in hand a principle that can really *explain* mental development, explain, that is, how the development takes place, what determines it in one direction rather than in another, why mental change is a growth and not a flux. To discuss this fundamental point would lead us too far. We need only refer to Prof. Stout's truly psychological chapters on mental process and on association in his lately-published *Manual of Psychology*.

Admirers of Prof. Stout's work will probably find on reading Mr. Petzoldt's volume that the two central points on which they will fundamentally disagree with the latter are:—

(1) Its abstract conception of the data of psychology, which is such as to make a reconstruction of the psychical life out of its own analysed material quite impossible.

(2) Its adoption of the hypothetical biological vital series as a working principle of psychological synthesis in the place of the clearly conceived but woefully neglected non-hypothetical psychical vital series. This latter as Prof. Stout's own treatment clearly shows, provides an admirable working principle for the explanation of mental development, and does not commit the student to any ultimate views as to the Unity of Consciousness.

The first indictment may seem to be unjust. Avenarius doesn't spin webs out of his own brain—except in Biology. His work bristles and reeks with facts. He is also very careful not to treat the individual as though he had no environment to reckon with. He is abstract only in this that he insists on having all his materials pure. But pure experience turns out to be experience purified of its vitality, the facts of consciousness, for instance, abstracted from the interest or endeavour that just makes them the facts of an individual self. The purified psychical processes are left like fishes in filtered water, or what is still worse, like fishes on dry land, finding their support outside their natural element. But what Science surely requires is simply experience purified of its confusions. Now when we are dealing with something that is the product of growth this demand for a pure experience does not simply mean the demand for a thoroughgoing analysis. The analysis must be throughout the differentiation of a principle, must, in fact, not only take the genetic form, but must be the analysis of a Self or an interest or of something that has in it the capacity to develop. It is of course quite possible to work out a purely analytic psychology on genetic lines. And this is indeed what Avenarius usually does, as witness his excellent analysis of conation. But the result of such an analysis is not

experience but its *disjecta membra*, arranged in stages, if you will. We are treated to an ideal dissection and have in hand all the materials for an excellent classification, but that is all.

Avenarius's fundamental grouping of the facts of mind under the two heads of 'Elements' and 'Characteristics' is intended to answer the purposes of such a classification. It affords a clearly analysed and comprehensive descriptive arrangement of the facts.

By 'elements' are meant mere sensations, feelings as such, sensations and feelings, that is, in abstraction from the meaning with which they have been invested. This meaning is, in a word, the characteristic. The element is what is characterised as having a meaning. And it is further important to note (p. 337 and pp. 256-258) that the meaning may belong to the object as that which makes it intelligible to the subject, or to the subject as that which gives a certain colouring or subjective tone to the attitude which the subject adopts towards its object. The term 'characteristic' thus includes the two ideas of 'meaning' and 'attitude-tone,' the one relatively objective and the other relatively subjective; and its essential advantage for purposes of classification lies just in this generality. But, unfortunately, it loses in explanatory power what it gains in generality. Those who are familiar with the use made by Prof. Stout of the two ideas of 'meaning' and of 'attitude' in explaining the process of mental development will see at a glance where the difference lies between Prof. Stout's procedure and that of Avenarius. In the case of Prof. Stout there is a formative psychical principle behind all acquisition of meaning or variety in mental attitude—the unity of conscious striving, oneness of Interest or Attention. We are able to trace the differentiations of interest or attention into the meanings that objects acquire for it and the attitude it assumes.<sup>1</sup>

This comparison between the two modes of treatment, between that adopted by Prof. Stout and that of Avenarius, may be carried a step farther. For to the fundamental division of psychical facts into elements and characteristics we must add another. Elements as well as characteristics may appear to us either as presentations or as representations, in the form, as Avenarius puts it, either of 'Things' or of 'Thoughts'. This distinction appears in Prof. Stout's *Manual* as that between perceptual and ideal-consciousness, and is worked out in the most concrete way in the closest relationship to mental development. Here again we have an analysis taking the form of the differentiating of a principle in contradistinction with the Avenarian distinctions and analyses which are abstract, descriptive, classificatory.

In conclusion we must note that the Philosophy of Pure Experience as represented by Mr. Petzoldt, though agreeing in all essentials with that of Avenarius and equally exposed to all the

<sup>1</sup> For general information as to the meaning of the characteristics and their relation to the elements and their combinations, see especially pp. 139, 253, 262, 266, 308, 337; also pp. 163, 165.



main objections levelled against his master's system and method, is not by any means to be identified with the Philosophy of Pure Experience as it appears in the *Kritik der reinen Erfahrung*. The present volume is really an introduction to the philosophy of Mr. Petzoldt through the medium of a critical exposition and extension of the views of Avenarius. The criticism mainly takes the form of a very thorough revision of the system of characteristics (cf. p. 307 with p. 116), and the extension consists mainly in a treatment of the ethical and æsthetical characteristics which lay outside the plan of Avenarius, whose *Critique* is essentially a Theory of Knowledge. We have now to look forward to the more independent labours of Mr. Petzoldt. The second volume of this introduction, which we are to expect in two or three years' time, is, so far as the author can say at present, to be devoted mainly to the investigation of the following central principle of mental development: 'Human Evolution bears its end within itself' (pp. 318, 319). Whether it will in any way appease the critics of the first volume is probably more than doubtful, but it is certain to be highly suggestive, methodical and clear; for it will be the work of a most able and conscientious thinker.

W. R. BOYCE GIBSON.

*A Modern History of Philosophy.* By Dr. H. HÖFFDING. Translated by Miss B. E. MEYER. London: Macmillan & Co. New York: The Macmillan Company. Two vols., pp. 532; 600.

It has been said that philosophical poems often suffer the fate of Tithonus; for the philosophy drags out an interminable old age by the side of the poetry which remains eternally young. And from a converse point of view it has been thought that histories of philosophy offer a similar spectacle; since the actual attempts and systems of which they treat have a lasting value, while the methods of interpretation and setting vary with the fashion of the day.

Such a view, however, is not likely to find many supporters. The average reader of philosophy knows very well how much he owes to the historians of thought, and can rightly estimate the comprehensiveness of view, the quick eye for inconspicuous germs of theory, and the sympathetic understanding of historical setting, which they have brought to the task.

All these qualities are admirably illustrated in the excellent work of Prof. Höffding. His wide reading enables him to give a very complete account of the great movements in Modern Philosophy. His special scientific interest does full justice to psychological inquiries, even where these appear in rudimentary shape. And there are many suggestions to be gained from his attempts to show in each case the connexion between a philosopher's character or circumstances and his philosophy, and between a general

bent of thought and its individual manifestations. To all these merits we must add Prof. Höffding's large conception of philosophy, a breadth of view which gives a just place in the history of thought to such men as Copernicus, Galileo, Newton and Darwin.

To pass to particulars, first should be mentioned the interesting description of the Renaissance Philosophers, especially of Giordano Bruno. But the main purpose of the first volume is concerned with what are here called "the great systems," *i.e.*, the systems of Descartes, Hobbes, Spinoza and Leibniz. Amongst these especially to be praised is the capital account of Hobbes. Indeed throughout the book full justice is generally done to English Philosophy, especially to the English tendency, often noted, to recognise the actual conditions of life and the problem of competition—a tendency which Prof. Höffding sees well illustrated in Hobbes' 'war of all against all,' Mandeville's *Fable of the Bees*, Malthus' work on population, and above all in Darwin's great discoveries. There is, however, a case in which an English writer does not get his due. Prof. Höffding, misled perhaps by biographical considerations and attention to 'motivation,' displays a very hostile attitude to Bacon, and openly rebukes our "adulation" of his genius. Bacon "possessed, it is true, a certain prophetic insight, and gave inspired utterance to thoughts," but his originality and importance are warmly disputed; and it seems that Bacon's brilliant and pregnant sayings, and his bequests both to the conceptions and language of science, *omnia* (as regards Prof. Höffding) *perfluxere atque ingrata interiere*.

To return to 'the great systems,' the account of Spinoza contains many admirable points. Indeed this appreciation is one of the best things in Prof. Höffding's work. It may, however, be questioned (though these are minor points) whether the antithesis between 'epistemological' and 'psychophysical' can fairly be applied to criticise Spinoza's monism, and also whether Prof. Höffding's view of the *scientia intuitiva* is not, to say the least, rather one-sided. In the very good criticism (which here follows) of the Leibnizian system, it is much to be regretted that Prof. Höffding has not shown more in detail Leibniz's undoubted though unacknowledged debt to Spinoza. It is not possible to discuss here Prof. Höffding's remarks on Locke, Berkeley and Hume, although the account of the last is particularly excellent.

The great feature of the second volume is Prof. Höffding's view of the Kantian system. And here we find numberless interesting points, among which may be mentioned a clever exposition of what is meant by the 'Leibnizianism' of Kant. In spite, however, of all its brilliance, Prof. Höffding's account of Kant shows two great weaknesses. The first of these is the excessive preponderance given to the negative result of Kant's doctrine; and it is here that Prof. Höffding labours most heavily under the 'law of relativity,' a law which has, we must hope, less tiresome and truistic associations and meanings for Prof. Höffding than it has

for us. The burden of this dreadful law no doubt it was which led to the rather hampered statement of what Kant actually understood by his transcendental proof. An analogous point of view with regard to ethics has also obscured Prof. Höffding's exposition of the way in which Kant conceived the relation of Freedom to the Moral Law. The second weakness of the author's work here is his short way with the logical problem. Prof. Höffding is not far from declaring that everything which is essential in the table of Categories can be simplified to two isolated forms, *viz.*, cause and quantity; and with these the whole of the immediate constructive logical process, which takes place in the simplest acts of (human) sensuous cognition, is to be performed. While quoting Schopenhauer's criticism of the Kantian Categories, Prof. Höffding does not draw attention to Schopenhauer's own difficulty as regards the union of thought and sensation: 'thought' is expressly ousted from 'perception,' and yet 'perception' can only be carried on, we are told, by the aid of 'understanding'.

The transition from Fichte's earlier position to his later view is not very fully described. And the whole account of Hegel, but especially of the Logic, is vitiated by that off-hand dismissal of the logical problem which has just been mentioned. The account of Schopenhauer, though very good, contains nothing very distinctive. In the whole description of this great period the most interesting thing is Prof. Höffding's attempt to show that during the full tide of the Romantic Philosophy there was, here and there making itself felt, an undercurrent of criticism.

It is impossible to go in detail through the many points which the rest of the book offers for discussion. To sum up, it may be said that in spite of some doubtful things, and perhaps one or two mistakes, Prof. Höffding's work is throughout full of interest and suggestion. It has the great merit of being an entertaining and most readable book. And, if used with caution, it will undoubtedly be found of great assistance to beginners in the study of Philosophy.

The translation seems on the whole conscientiously done. So many English readers of Philosophy are debarred from making direct use of German books, that we must always feel grateful to those who will undertake the labour of translation. This makes it a particularly thankless task to note any slips that there may be in performance. As regards the present work, however, exception must be taken to the use of such compounds as "Aristotelio-Medieval" (i., p. 78), "Naturo-philosophical" (i., p. 70), and, worst of all, "religio-philosophical" (ii., p. 20), "religio-naturalistic" (ii., p. 26), "religio-historical" (ii., p. 173) and "religio-psychological" (i., p. 78). A certain want of idiom is occasionally observable, *e.g.*, in the use of "his fatherland" and in the use of "inwardness" ("his letters bear witness to religious inwardness," and of Shakespeare, "his rich emotional inwardness"), and in such phrases as "the so-called encasement theory"

and "the a priorism as well as the phenomenalism". The rendering of *Hagestolz* as "hardened Benedict" seems a doubly unhappy attempt to take an idiom by storm. Here and there the meaning of the German seems to have been missed; e.g., in i., page 308, we find an argument running thus: "its existence" (i.e., the existence of the one substance) "is necessary, because there is nothing it can exclude" (*weil es nichts gebe was sie auszuschliessen vermöchte*). The English renderings, again, have not always been chosen so as to harmonise with the Latin quotations which follow naturally in the German context; e.g., i., page 109, "but that they are unseemly (*honestum*)," etc., where the German runs "*es sei aber doch nicht schicklich (honestum)*"; and i., page 310, "we must (*debemus*)" followed by "we must (*debet*)," where we find in the German "... müssen wir (*debemus*) . . . muss (*debet*), die ganze Ordnung," etc. These are, however, comparatively small points, and it would be a churlish spirit which did not recognise the service done to English Philosophy by the translation of such a book as this.

The book seems fairly well got up, but is rather disfigured throughout by misprints; e.g., "memotechnical," "*citius emergit veritas*" (this is also found in the German edition), "*ad inventionum principiorum*," "*per consensionum*," "*fractum subauditum*" "*fractum expressum*" (for *pactum*), "*atheismus crassimus*," "*intima modus nondum patent*," "*Guelinx*," "*resp. ed. sec. obj.*" (also in German edition), " $\div (\div 2) = 2$ ," and numberless others. They are, luckily, not such as to cause any difficulty.

J. A. J. DREWITT.

## X.—NEW BOOKS.

*The Scientific Basis of Morality.* By G. GORE, LL.D., F.R.S. London: Swan Sonnenschein & Co.

THERE is no need to approach this volume with prejudice: it stands self-condemned, a typical illustration of the manner in which science, through no fault of its own, earns discredit before the bar of philosophy. It proclaims itself, in language that would be presumptuous even were it justified by the sequel, an attempt to consider 'questions very complex and profound,' including some 'which have been considered insoluble,' 'a work largely for the future,' 'in some respects in advance of its time'. Then follow five hundred pages of ill-connected scientific fact entirely foreign to the subject of morality, with a concluding eighty pages whose relevance seems their only title to toleration. For a man of science to write with such elementary disregard of scientific proportion that nearly five-sixths of the work are extraneous matter, to write on moral theory with an almost entire and deliberate ignorance of the labours of preceding moralists, to raise scarcely any of the great moral problems, and to attempt a solution of none—these things are unpardonable, and in a voluminous work they evoke anger even more than bewilderment.

To criticise the book on general grounds would be superfluous and unmerited, it will suffice to point out some of its absurdities in exposition. World-theorists generally begin with definitions: here are two: '*Facts* are truths,' '*truth* is perfect consistency with facts'. Again, as to the limits of science,—'Science, like everything else, is limited by the possible, by agreement with the operations of energy, with law, and by consistency with all truth; by time, space, and all other natural conditions'; while on the very next page 'The limits of science are virtually boundless'. Such sentences set us academically wondering whether the author does the greater violence to consistency of thought or to the conventions of language. And yet again with infinite audacity, after approving the ordinary distinction between science and art, how that a science teaches us to know, an art to do,—'Science,' says Dr. Gore, 'is the art of correct thinking'. A belief in the non-existence of essential evil and injustice leads to contradictions which there is little effort to conceal, much less to acknowledge or explain. At one time 'complete justice and compensation are ultimately accorded to all living things,' at another 'causation is stronger than justice,' 'mankind is governed by ruthless and irresistible laws rather than by what we call justice'. Or listen to a triumphant refutation of Kant: 'Kant stated that Space and Time were forms of the mind itself; but we know that the relations of time and space to material bodies must remain when all living creatures are dead and all mental action has ceased'; clearly so far from overthrowing Kant's position, his adversary has not even been able to under-

stand it. To his qualities as a controversialist the author sometimes adds a delightful freshness of repartee. In reference to a statement of Dr. Temple that 'I am not constrained to believe that if one event is followed by another a great many times it will be so followed always,' Dr. Gore remarks '(1) that many theological persons do not feel constrained to believe any scientific ideas which appear to contradict their fixed doctrinal beliefs; (2) it requires much more scientific experience than such persons usually have had to become fully convinced of the universality of natural causation'. The argument is neither enlightened nor profound, but its tone at least is ingenuous and its complacency amusing. Nor indeed are the *obiter dicta* of this work less noteworthy than its sustained apodeictic. What is to be said of a man who tells us that 'two of a trade rarely agree, *because* their special ideas respecting their calling are often inconsistent with each other,' and that 'the influence of Mahomet, Jesus Christ, Shakespeare, and Newton are felt *even now*'?

We cannot but conclude that Dr. Gore's book had much better been left unwritten. After making all allowances for its scientific standpoint, the foolish rancour against Christianity, the arrogant materialism, the cold passion for temporalities, there is yet much that cannot be condoned. The book has unhappily an individuality of its own. We are struck by the exercise of a brilliant ingenuity in adapting the verses of Pope and Longfellow to any context, and by a wearying reiteration of catch-phrases, 'immutable energy,' 'unprovable dogmas,' etc., which constitute the author's single line of defence. The only morality in the book is a scant elaboration of one or two common maxims, finally embodied in ten of the most comprehensive platitudes ever submitted to the moral palate. 'To do the greatest good' (2nd rule), 'to continually improve' (5th rule), 'to properly value all things' (9th rule)—this sort of stuff is the reader's only reward for nearly six hundred pages. Dr. Gore has intimated that this is 'a work for the future': we may at least agree with him that it is a startling anachronism.

E. A. MENNEER.

*The Conscience of the King.* By JAMES CARMICHAEL SPENCE. London: Swan Sonnenschein, 1899. Pp. 280.

The title of this book is not an obvious key to its contents, and yet after finishing Mr. Spence's pages one is obliged to admit that the name he has selected for them is in many ways appropriate. Mr. Spence tells us that some years ago he was engaged on a scheme initiated by Mr. Herbert Spencer, the object of which was "to present briefly in a tabulated form the contents of our statute book from early days onward, showing why each law was enacted, the effects produced, the duration, and if repealed the reason of the repeal". This scheme after much preliminary work had been done was ultimately abandoned. Mr. Spence's share in it consisted in reading and making digests of the oldest of our statutes. This work opened Mr. Spence's eyes to the crimes and follies of legislators. One of the first things he found out in examining these old statutes was that many of the schemes which are now current for bettering the condition of the people by Act of Parliament had been tried in the past and found to fail. This led him to ask, Why did these laws fail? It was not because men were worse in the past than they are now. It is because the good intentions which are a safe guide in private life are not merely useless but positively mischievous in politics. Legislation has in the main been based on good intentions

and unproved theories. It has not been based on facts, observation and experience. Hence it arises that when the law comes to be administered, when it is confronted with the actual facts of the problem which it is supposed to solve, it breaks down because it has not taken account of these facts. From the fact that laws have been so unsuccessful in the past Mr. Spence arrives at the conclusion that there should be little or no law-making at all. But surely this does not inevitably follow. What follows is that the business of law-making is an exceedingly complex matter: that the good intentions of the legislator are not a security for the goodness of the law which he enacts: that laws, if they are to be of service to the community, must be resting on a wide and solid basis of fact and experience. Mr. Spence's strictures on the laws of the past and of many of the laws now in operation may be perfectly just in the main. But it does not follow from these strictures that society requires hardly any laws at all. All that Mr. Spence proves is the necessity for proceeding to legislate with the utmost circumspection: the necessity for mastering all the facts of the case: the need of checking all preconceived theories and opinions and of collecting and being guided solely by the facts and arguments which bear upon the legislative problem to be solved. The fault of Mr. Spence's book is that he assumes the equality of all citizens in the community. But this is notoriously not the case. It is true no doubt in theory that they are all equal before the law. But in many instances equality before the law does not amount to much when there is an absence in economic equality between man and man. The individual in a position of extreme economic dependence occupies a very different status before the law in many important particulars from the individual in a position of economic affluence. In order to secure justice to all—and justice is Mr. Spence's political ideal—the state is obliged to protect its weaker and more dependent members. The duty of protecting the weak—the economically and physically weak—is a duty which involves legislation. At the same time it must be admitted with Mr. Spence that such legislation often misses its mark. It does not take sufficient account of the complexity of the problems before it. The value of Mr. Spence's book is to show how very difficult it is to legislate; how easy it is to make matters worse instead of better; how circumspect all law-makers ought to be; how important it is that all law should be the matured result of an exhaustive knowledge of the facts. *The Conscience of the King* is a book which shows how difficult it is to legislate with wisdom and success.

*The Social Philosophy of Rodbertus.* By E. C. K. GONNER, Professor of Economic Science at the University College, Liverpool. London: Macmillan & Co., 1899. Pp. 209.

In the present volume the author attempts to combine the social and economic teaching of Rodbertus into a systematic whole. Like most modern socialists Rodbertus has his own philosophy of history. He divides the social history of mankind into three periods, which are described by Mr. Gonner as "the family or tribal period, the state or national period, and lastly, far in the future, the period of organised humanity". We have passed through the first of these periods in all the more civilised parts of the world: in the West we are far advanced in the second. The third is still in the far-off future. One of the chief features of the first or family period is "a sense of union and the recognition of the utility of co-operation and mutual assistance" among the members of the family group. The second or state period is sub-



divided by Rodbertus into three epochs: Heathen antiquity, the Christian Teutonic State, and the State of the Future. Rodbertus selects the city state of Rome as a typical example of the state in Heathen antiquity. This city state was based upon the household. So prominent was the household that the details of its constitution largely determined the nature of the state on its social side. The system of autocracy which pervaded Rome rested on the autocracy of the household, and the demands made by the state on the individual were the counterpart of the demands made on the family by the father of the household. In time the household degenerated into a trading unit, and dragged down the ancient city state to a common doom. The ancient State was succeeded by the Christian Teutonic State. In this new order the autocracy of the household is superseded by the autocracy of the locality. The local group takes the place of the family group and the lash of the slave driver is replaced by the subsistence wage. But the mediæval Christian State in its turn is disintegrated and dissolved by the advent of Invention and Capital. Capital and invention break through the local regulations which lay at the basis of the mediæval state and the modern state comes into existence. Capitalism and competitive individualism are the dominant factors in the modern state, and their concomitants are pauperism, commercial crises and bankruptcy. According to Rodbertus the present competitive capitalistic order of society will be succeeded by a period of equilibrium. This period will arrive when the will becomes dominated by social rather than individual ends. The structure of society at this stage will be the assumption of the direction of national industry by the state. Private property will continue to exist, but it will be restricted to property in income, and in things to be enjoyed and consumed. But the final formation of society will not be national but cosmopolitan. The common bond of humanity will supersede the narrower ties of nationality in the ideal society of the far-off future. We are sorry that we cannot follow Mr. Gonner's exposition of Rodbertus any farther. Passing from the origin and development of society Mr. Gonner proceeds to give us an account of Rodbertus's views as to the nature and principles of society, the character of the modern state, and the state as an industrial organism. At several points we can see that Rodbertus was considerably indebted to English writers such as Ricardo, William Thompson and Robert Owen. But after making deductions on this account he still remains a conspicuous figure in the domain of thought. It is certain that Marx owed much to him. Mr. Gonner has rendered valuable service to English students in presenting all that is best and most characteristic of Rodbertus before us in such a lucid and careful manner. Mr. Gonner's task was one of no small difficulty. He has bestowed abundant labour and patience upon it, and it is to be hoped that his book will meet with a wide circle of readers.

*The Six Systems of Indian Philosophy.* By the Right Hon. F. MAX MÜLLER, K.M. London: Longmans, Green & Co., 1899. Pp. 618.

We all know the charm of Prof. Max Müller's writing. He brings it to bear here on a subject which tests it to the full. It is of interest to compare the changes in Indian thought with those in European thought. But the working of the Indian intellect is couched in words so strange to us, seems often so bizarre and childish, takes for granted so much we are not prepared to grant, that the study of it is beset with difficulty. It is clearness, therefore, and many another quality of sound methodology, which is required rather than grace and charm.

After a charmingly-written if somewhat desultory introduction, the author sets out the philosophical views which were adumbrated in the Vedic hymns and the Upanishads before the time when any philosophy in India had been built up into a system. In doing so he constantly quotes, or refers to, writings which belong to a very much later stage than the one under exposition. This is confusing, and the result may instructively be compared with the treatment in the first volume of Prof. P. Deussen's *Allgemeine Geschichte der Philosophie*, where the same part of the subject is dealt with according to clearer, more historical methods. The author has possibly himself failed to grasp the essential fact and features of historical growth in the ideas he is handling. Or is it mere ambiguity which prompts him to say (p. 239) that the system of the Vedānta was slowly elaborated "thousands of years ago"? It is much the same with the subsequent chapters which treat, in succession, of those six systems which were subsequently built up by the scholastic writers of mediæval India, and which, while they do not exhaust the wealth of Indian Philosophy, constituted during an epoch the orthodox curriculum. Authorities differing in time by centuries are quoted side by side without sufficiently clear distinction being drawn between them. It is apparently much more difficult to assign dates to Indian writers than to those of Europe. But it is certain from what the author himself states, that a distinction between earlier and later thought is possible. We find much sympathy, theoretically, for historical treatment, but practically no attempt at it is made. In spite of the abundant material set out in this volume, it conveys the impression of having been done hastily, and of being rather a furbishing up of a book of notes written long ago than a really careful study of exposition and criticism such as the times are ripe for. The work is compiled for students of philosophy in general, and, to adapt and strengthen the author's over-modest assertion, the time is now come when no one ought to claim that name who is not acquainted with the leading features in the history of Indian philosophy. Our insular dilatoriness has suffered a task to be attempted by a veteran publicist which should be occupying the thought of our leading philosophers. The result, even if it can scarcely add to the former's great reputation, at least in its intention does him honour.

*Letter-, Word-, and Mind-Blindness.* By JAMES HINSHELWOOD, M.A., M.D., F.F.P.S. Glasgow. Surgeon to the Glasgow Eye Infirmary. London: H. K. Lewis, 1900. Pp. 88.

Mainly a reprint from the *Lancet* of papers read before the Glasgow Medico-Chirurgical Society. Six new and valuable cases are recorded, four from the author's own observations (complete letter- and word-blindness, place-blindness, partial mind-blindness with dyslexia, and word- without letter-blindness), one from notes by Dr. J. Love on a case of Dr. Finlayson's, and one from notes by Dr. J. Carslaw on a case of Sir W. T. Grainger's (both letter- without word-blindness). The last two cases are especially interesting, and the author believes that the type is not rare though generally overlooked. The reported cases are throughout compared with similar accounts by other writers, and the general exposition is clear and straightforward. But the book suffers from faults common to all reprints of lectures. On the one hand there is too much repetition, and on the other there is a lack of the comprehensiveness claimed at the outset of the work. Thus the psychology of the preliminary chapter is so terse as to be misleading (as in the statement that 'when we recognise a friend in the street, we do so by

comparing the present retinal impression with the visual memory of him, which exists preserved in a special area of the brain'); an extreme view is taken about 'partial memories' without reference to such objections as are raised by Pitres; no mention is made of Bastian's arguments against the 'unilateral' view of writers like Déjerine, and so on. But with a certain amount of modification and with some additions made to it, this would be a very useful book.

T. L.

*Ethics and Religion: A Collection of Essays by Sir John Seeley, Dr. Felix Adler, Mr. W. M. Salter, Prof. H. Sidgwick, Prof. G. von Gizycki, Dr. B. Bosanquet, Mr. Leslie Stephen, Dr. Stanton Coit and Prof. J. H. Muirhead.* Edited by the Society of Ethical Propagandists. London: Sonnenschein, 1900. Pp. ix., 324.

This is a volume of addresses delivered for the most part ten years ago when the ethical culture movement was new to this country, and they serve to show what the scope of the movement was in the view of its leaders at that time. The addresses are all, it is needless to say, full of enthusiasm for human good, and some of them contain valuable philosophical ideas. Their faults are probably due to the fact that they are pioneer work; they are too polemical and too vague. Mr. Leslie Stephen is the worst offender in the former respect. He gives us pungent criticism where we should prefer construction. The reproach of vagueness will be removed, let us hope, in a later series. At present we are strongly exhorted to be virtuous, but do not get much instruction in the art of virtue. No propaganda, ethical or otherwise, is much helped by generalities.

*Crime and Criminals.* By J. SANDERSON CHRISTISON. London: Williams & Norgate, 1899. Pp. 177.

This is a small work on Criminal Anthropology by an American doctor. It is in the main a reprint of a series of articles written by the author a few years ago to an American newspaper. These articles generally deal with some notorious criminal whose case was arresting public attention at the moment. Dr. Christison's method is to examine the physical and mental characteristics of the individual criminal, and to look upon the crime as the result of these characteristics. Some of these characteristics are inherited and some are acquired and punishment as at present practised so far from repressing or eliminating these characteristics as a rule intensifies them. The book contains no new ideas but it contains what is often more useful a fresh collection of facts. All these facts go to show that the problem of crime is only a branch of the social problem in its entirety and that the way to diminish crime is by improving the general conditions of the social organism. Dr. Christison's book will be useful as a means of popularising a more reasonable conception of crime and the character of the criminal population.

*The Morals of Suicide.* By Rev. J. GURNHILL. London: Longmans, Green & Co. London, 1900. Pp. x., 227.

The author approaches his subject "from the standpoint of a Christian Socialist," and discusses it in its "moral and religious aspect," declaring that its social aspect is "of course dependent" on the former. His book requires no comment from a philosophic point of view, save that even from his own the wrongness of suicide is not proved, but only assumed, by calling it 'self-murder'.

*Histoire de la Philosophie Médiévale, précédée d'un Aperçu sur la Philosophie Ancienne.* Par M. DE WULF, Professeur à l'Université de Louvain. Louvain: Institut. Supérieur de Philosophie, 1900. Pp. 480.

It is impossible to form a favourable estimate of this history of mediæval philosophy, written by a professor in the Roman Catholic University of Louvain. To deal adequately with it indeed, as the industry and reading apparent throughout its pages deserve, would require a reviewer whose knowledge of the details of the subject was comparable to the author's own; and to such knowledge I can make no pretension. It is true that (as I shall presently show) the inaccuracy of some of M. de Wulf's historical statements is such as to shake one's confidence in his general trustworthiness; but the book is, apart from that, condemned by the spirit and temper in which it is written. M. de Wulf, notwithstanding that he has thought it worth while, in a short preface, to discuss the meaning of 'history of philosophy,' and to suggest a theory of 'philosophical cycles,' has in point of fact no conception of treating the subject otherwise than as a theological censor. One can find in his pages the dates and opinions of many philosophers; but, except that some were more, and some less, in harmony with the 'central scholastic synthesis' represented by St. Thomas, one does not really learn anything of the organic connexion between their thoughts. Scholasticism is not indeed, according to M. de Wulf, necessarily the only synthesis which would harmonise with the Catholic faith (p. 148 n.), but the attempt at 'l'accord des enseignements de la religion catholique et des résultats de l'investigation philosophique' (p. 148) is a 'real and intrinsic' characteristic of it. Accordingly, a tendency to deflect from this 'accord' constitutes a school or type of opinion a 'deviation de la scolastique,' and, if more marked, 'antiscolastique'. This is M. de Wulf's consistent, and practically his only principle of classification. At the same time, he avoids the direct discussion of what he considers to be purely theological, rather than philosophical questions, such as those relating to the Trinity, as not belonging to a history of philosophy. Hence, even from the theological censor's point of view, the position of the writers discussed is never fairly and fully put before the reader; and remarks, or even exclamations, which can only be called jejune, often take the place of discussions, where theological sympathy is wholly absent; as when Behmen is dismissed, after a very slight indication of his teaching, with the ejaculation 'Quel dévergondage d'idées!' (p. 430). This absence from M. de Wulf's work of a genuinely scientific and objective attitude is all the more deplorable, because more significant of the atmosphere in which the author moves, that he gives his reader the impression of a scholar who wishes to study his subject in a serious and liberal spirit, and has taken no small pains to acquaint himself with the literature relating to it.

To the part of the book which deals with its main subject—mediæval philosophy—is prefixed an account,—called on the title page an 'aperçu'—of Indian and Greek philosophical systems. In regard to Greek philosophy the theological censor's attitude produces more curious results than in regard to mediæval. What are we to say to this astonishing account of the death of Socrates? 'Il fut condamné,' says M. de Wulf, 'à boire la ciguë, pour avoir combattu trop ouvertement le polythéisme et affirmé l'existence d'un dieu unique, l'immortalité de l'âme, la récompense des bons et la punition des méchants. Mort pour la confession des grandes vérités de la religion naturelle, Socrate aurait cueilli la palme du martyre en plein paganisme, si, au moment de mourir, il n'aurait, en un moment de défaillance, recommandé à ses disciples d'immoler un

coq qu'il avait promis à Esculape' (p. 37). What of the assertion (on p. 79) that the 'immortality of the soul' is a fundamental point of Aristotelianism—made notwithstanding that M. de Wulf is aware of the variety of opinion which existed in the middle ages as to Aristotle's teaching on this subject? What of the remark—as of one correcting an essay—with which Aristotle's political philosophy is dismissed (on p. 81), 'On soit que le Stagirite a gâté de belles pensées sur les relations familiales, en faisant l'apologie de l'esclavage'? Mistakes like *ἔπος* (p. 44) and *διαίρεσις* (p. 45) are doubtless due to the printer; but the explanation of *πράξις* and *ποίησις* on page 60 shows a lack of familiarity with the language of Greek philosophy.

In the part of the book dealing with mediæval philosophy there is much to which exception may be taken, and a reviewer with a larger knowledge of his own, would probably find more. The 'ontological argument' of St. Anselm is not given in the form in which he puts it; the statement of it in M. de Wulf's text bearing indeed no close resemblance to the Latin in the note (p. 180); and it is quite untrue to say that Descartes took no notice of St. Thomas's criticisms in reviving the argument; on the contrary, he expressly distinguishes his position from that criticised by St. Thomas in his answers to the charge of opposing the latter which his theological critics had not failed to bring against him (*Resp. ad 1<sup>as</sup> Obj. ad Meditationes*).

The historical knowledge of M. de Wulf is singularly defective for one undertaking the task of a historian of mediæval philosophy. He apparently thinks that Bede was an Irishman (p. 163); that the abbey of Bec and, still more strangely, of St. Gall (for as to Bec the subsequent careers of its two most eminent sons might have misled him), were in England (p. 164); that 'Cornificius' was the real name of the person castigated by John of Salisbury, and that he founded a sect called the Cornificians (pp. 196, 212). Where is 'le comté de Halès' in England, from which, according to our author, Alexander of Hales derives his name? He states, as though there were no other account of the matter, that 'S. Bernard fit condamner Gilbert [de la Porrée] au concile de Reims en 1143. L'évêque de Poitiers retira ses propositions.' Whatever was the precise issue of that council, as to which the contemporary accounts vary, it is certain that this gives a very misleading impression, as though Gilbert was condemned in the same sense as Abelard had been. According to the full and contemporary account in John of Salisbury's *Historia Pontificalis*, he was not condemned, strictly speaking, at all; but undertook himself to correct his commentary on Boethius de *Trinitate* so that it should not disagree with certain propositions, the formulation of which was ultimately due to St. Bernard. John of Salisbury clearly supposes Gilbert to have really withdrawn nothing, and only by misunderstanding to have been regarded as heretical at all. Here however M. de Wulf follows one account (St. Bernard's), though he would have done better to indicate that there was another. One may suppose that Paul V., on page 182, as the Pope who sent the writings of the pseudo-Dionysius to Pepin, is only a misprint for Paul I.; and 'Les réguliers' on page 246 is certainly no more than a slip—though a serious one—for 'Les seculiers'. A worse one is the confusion of the Brethren of the Free Spirit and the Brethren of Common Life on page 369. Why does M. de Wulf always quote Ueberweg as Ueberwegs?

These defects are however trifling compared to that of the one-sided and partisan attitude which disqualifies M. de Wulf for the task he has undertaken. To say in a biography, however brief, of Abelard, that he was 'forcé de quitter Paris à cause du dérèglement de ses moeurs' (p. 201) with no further allusion to his famous and tragic history, is puerile; to

describe in what should by its form be a dry statement of essential facts the mysticism of Sebastian Frank as 'sacrilegious' (p. 437) or Giordano Bruno as 'l'infame et déloyal persécuteur' of his abandoned religion (p. 417), is in a historian of philosophy worse than puerile.

CLEMENT C. J. WEBB.

*Les Causes Sociales de la Folie.* Par G. L. DUPRAT, Docteur ès lettres, Professeur de philosophie au Lycée d'Alençon. Paris: F. ALCAN, 1900. Pp. 202. Price 2 fr. 50 c.

This eminently lucid and readable little book does not aim so much at providing novel facts or propounding novel theories as at emphasising the admitted influence of social conditions upon various kinds of mental disease; and it has a practical as well as a scientific end in view. The psychological standpoint assumed by the author is that of his previous work '*L'Instabilité Mentale*' (reviewed in *MIND*, Oct., 1899). Social forces, he now tells us, may produce or develop mental instability (1) by direct action on the nervous system; (2) by indirect action on the nervous system through the medium of consciousness; or (3) by direct action on the mind, a somewhat unsatisfactory method of classification. More important is the division by results: the influence may show itself in the aspect of the mental trouble or in its formation and essential nature. The variations of aspect—*e.g.* in megalomania—are disposed of in a single chapter. The author then clears the way for the main question by dismissing the vague term 'degeneration' from the etiology of insanity; 'pathological hereditary' is to be preferred, and it is mainly due to social causes. In chapters iii. and iv. it is shown that, though madness is essentially the same at all times, the predominant species varies with social conditions; characteristic of the present day is general paralysis, the product of many social evils (overstrain, luxury, alcoholism, etc.) that differ in relative importance in different countries, but have a common root in excessive competition. Chapter v. deals with '*Idées de grandeur*' due to unbounded ambition and with the '*persécutés-persécuteurs*'; chapter vi. with religiosity and its varying character among Mohammedans, Catholics and Protestants. Chapter vii. attempts to show that pathological states of instability and dis-aggregation can be ascribed to the body social, and that criminal insanity is their characteristic product; and the work ends with a few hints towards a 'social therapeutic,' in the course of which the author pleads for a more practical treatment of the insane, for a more virile system of education, and for the prohibition of unhealthy marriages, etc. '*Bref, il faut préparer une hérédité biologique et une hérédité sociale favorables à la santé morale.*' The chief defect of the book seems to be the absence of a proper preliminary classification, distinguishing between more immediate and more remote causes of disease. Obviously the marriage of unhealthy persons and a tendency to unbridled ambition cannot be placed side by side in an etiological scheme. Further, it is not made sufficiently clear whether any given social influence—religion, for example—itself produces mental instability or whether it is merely 'like the match to tinder, the disorder being rooted in other causes' (Savage). Of details to which exception may be taken only two can be mentioned here. The author inclines to M. le Bon's unguarded habit of describing as a 'crowd' any number of persons (*e.g.* a sect) united by a common interest, and this leads to several dubious statements. Secondly, the application to the community of pathological terms borrowed from the individual is in some respects a confusing use of analogy; for the

individual is proved morbid by rough contrast with the average, but M. Duprat contrasts all present societies, not with the average, but with the ideal. On the whole, however, this work, if insufficiently systematic, is both interesting and suggestive.

T. LOVEDAY.

*Des Religions Comparées au point de vue Sociologique.* Par RAOUL DE LA GRASSERIE, lauréat de l'Institut de France, Correspondant du Ministère de l'Instruction Publique, Associé de l'Institut International de Sociologie, Membre de la Société des Gens de lettres, de l'Académie de législation de Toulouse, de la Société de législation comparée, Docteur en droit, Juge au Tribunal de Rennes, officier de l'Instruction Publique. [Bibliothèque Sociologique Internationale.] Paris: V. Giard & E. Brière, 1899. Pp. 396.

To synthesise all religions (with the help of several histories of religion, not, however, the newest), to discover in them the common object of establishing harmonious social relations between man and the other 'beings' of the cosmos (vegetables, animals, demons and gods alike), and to formulate the laws governing the intercourse proper to such a "*supra-société*" or "*hypersociété*," such has been M. de la Grasserie's labour of love, and thereby has "the science of cosmopsociology" come into existence. The book proclaims itself a study in pure cosmopsociology, and as such appeals primarily to the pure cosmopsociologist. The author hopes that the Paris Exhibition of 1900 may witness a Congress of Religions, which shall inaugurate a universal religion by eliminating the "uncivilised" religions, by encouraging all to practise two religions just as one learns to speak two languages, and by promoting "syncretism or fusion". To such a Congress the book will certainly prove useful. Meanwhile, the student of Religion at its comparative level cannot fail to derive therefrom many a hint as to the advantage of applying the ideas of the higher sociology to the particular 'organism' whose habits he studies. A flood of light, for instance, is let in upon Moses' procedure in raising up a brazen serpent before the eyes of the Israelites by recognising it to have been a case of religious "vaccination". In short, only the "impious" man, "*Panarchiste de la société cosmique*," is likely to pronounce the book either fantastic or superfluous.

R. R. MARETT.

*Le Problème de la Mémoire; Essai de Psycho-Mécanique.* Par le Dr. PAUL SOLLIER. Paris: Félix Alcan. Pp. 218. Price 3 fr. 75.

This book does not profess to be a theory of memory. The author holds that there is room for an examination of the problem of memory from the standpoint not of psychology or physiology but of pure physics; and accordingly he draws out analogies between the phenomena of memory or of its correlated brain processes and those of magnetism and electricity. The value of such exercises is open to question; to those who find amusement or profit in them this work should prove interesting, for Dr. Sollier shows abundance of ingenuity. The analogy of which he makes most use is that of an accumulator. However, the greater part of the book is given up to psychological and still more to physiological questions, which have to be settled before appropriate physical analogies can be found. The first chapter is an interesting, though not altogether accurate, discussion of previous views; chapter ii. deals with Fixation and Conservation; chapter iii. with Evocation and Reproduction; and chapter iv. with Recognition and Localisation. The last chapter treats of the evolution, seat, and mechanism of memory. As regards the 'seat,' Dr.



Sollier comes to the conclusion that there are (1) centres of reception which are also centres of representation, and (2) centres of perception—*viz.*, the frontal lobes—which are also centres of conservation and evocation. 'The phenomenon of evocation includes the study of all the conditions and influences that prepare the way for reproduction.' The discussion is clear, but it would gain by condensation. Occasionally we meet with very novel statements, and the grounds for them are not always given—*e.g.*, the assertion of 'parallel' alteration of 'cerebral activity' and electrical resistance of the brain is quite valueless apart from an accurate account of experimental conditions and a full record of figures, etc. (p. 198). On p. 176 ff. observations are repeated from the author's previous work on Hysteria. Some of them are very remarkable and require confirmation, as does his whole doctrine of 'cerebral coenæsthesia'.

T. L.

*Les Troubles Mentaux de l'Enfance : Précis de Psychiatrie Infantile avec les Applications Pédagogiques et Médico-légales.* Par le Dr. MARCEL MANHEIMER, Ancien Interne des Asiles de la Seine, etc. Préface de M. le Professeur Joffroy. Paris : Société d'Éditions Scientifiques, 1899. Pp. 188.

This little treatise is what it professes to be—a  *précis*  of what is best in the recent studies of infantile mental troubles. Full references are given. The book thus provides the elementary student with all he requires, and prepares for him a line of future study. Dr. Manheimer, starting from the "evolution of the infant in the normal state," summarises, in the first part, the causes of insanity. In the second part, Semeiology, he gives a chapter to each leading division—troubles of the feelings, intelligence, including attention, memory, etc., activity, impulses, will. In the third part, he classifies mental diseases. The classification, which follows Magnon and Krafft-Ebing, aims less at theoretical freedom from cross-divisions than at didactic sufficiency. The main groups are first, pure psychoses, including mania, melancholia and recurrent insanity; second, states of degeneration,—the deliriums, with troubles of intelligence, feelings, etc.; third, the neuroses,—some being really degenerations, but special enough to demand a class apart; fourth, toxic insanities; fifth, as supplementary, the dementias,—states of regression; sixth, states of arrest—idiocy, imbecility. Only the features special to children are elaborated. The fourth part is Médico-legal. It deals with responsibility in infants, varieties of criminal infants, infant evidence and suicide. The fifth part deals with treatment and public assistance. There is a statistical appendix. The little book shows a vast amount of sifted reading; it is relevant and adequate in its summary of opinions, and, accordingly, it is a good handbook to the practical study of insanity in children. There is not much room in the book for discussion of psychological refinements, but the paragraphs on "traitement psychologique" show a careful study of suggestion. Great stress is laid on the "*illusion of sleep*" in non-hysterics. The illusion is found to be sufficient, "*car elle peut être rendue très forte*" (p. 160). And so the Charcot view of the true hypnotic sleep as possible only in hysterics is saved.

W. LESLIE MACKENZIE.

*Le Problème des Sexes.* Par JACQUES LOURBET. Paris : Giard et Briere, 1900. Pp. 301.

This work is the twenty-fourth volume of the International Library of Sociology, and it speaks well for the interest which is taken in Sociological

questions in France that so large a number of works should have been published by the International Library in so short a time. M. Loubet commences the study of his problem by a review and criticism of the researches that have been made in the domain of experimental psychology. As a result of this review and criticism he arrives at the conclusion that the mental evolution of woman has not yet been completed. Hence arises in his opinion the problem of sex. M. Loubet then goes on to examine the opinions of such men as Prof. Lombroso, Prof. Fouillee, M. Faguet, Mr. Herbert Spencer, etc., as to the mental and social status of women. He compares the mental capacities of men and women. He considers whether and in what direction maternity and its burdens tend to diminish high intellectual activity. He deals with what love between the sexes has been in the past and what it ought to be in the future. As a result of his inquiries, M. Loubet arrives at the following conclusions: In the early stages of civilisation physical supremacy favoured mental development, and the reason why women have hitherto been less inventive and less brilliant than men in the intellectual sphere is to be attributed to their physical inferiority. But civilisation has now reached a stage when physical force has been de-throned by mental force. This fact introduces a new element into the problem and prevents us from being able to assert that as woman has been inferior to man in the past she must necessarily be inferior to him in the future. Most of the judgments passed by men on women are the products of instinct rather than of reason, and contemporary science has been unable to establish the fact that women are stricken with an incurable mental inferiority. What is wanted at present is to abstain from assertions respecting the equality or the inequality of the sexes, but to proceed to give women liberty. Liberty is the only way in which a woman can develop the capacities within her. It is the mother of originality, of variety of progress; the only safeguard of moral and intellectual autonomy. The solution of the sex problem is to give woman liberty to be herself, in which, of necessity, is included the fullest economic liberty. Liberty would not lead to an obliteration of sex characteristics: these will always exist. Men and women will never be equal because they will never be entirely the same. But inequality will not mean predominance, it will mean variety, it will merely mean that there are diversities of gifts, and that these diverse qualities are all needed to give completeness and symmetry to the social organism. A fine, if at times a somewhat dithyrambic spirit, prevades M. Loubet's book. His conclusions rest upon intuitions and hypotheses and not exclusively on established facts. It cannot be said that he has added much new material to the discussion of his subject. But he has dealt with existing material in a sincere and lucid manner.

*Les Paysans et la question paysanne en France dans le dernier quart du XVIII. siècle.* Par N. KAREIEW, Professeur d'histoire à l'Université de Saint-Petersbourg. Paris: Giard et Briere, 1899. Pp. 634.

This is an excellent book, translated from the Russian, but it is more directly concerned with economics than with social science in the strict sense of the term. It is a careful and exhaustive study of the condition of the French peasantry in the last quarter of the eighteenth century. The work is divided into seven parts which treat respectively of the relations of the nobles and the peasants, the townsmen and the peasants, the state and the peasants, the general situation of the peasantry before the revolution, the peasant question in its various aspects, the attempts

at rural reform, the elections to the States General in 1789 and the solution of the peasant question. In the preface to the French translation Prof. Kareiew says that the subject of the present volume was suggested to him not only by a scientific interest in the French Revolution but also by the social interest that the peasant question has for Russia at the present day. The 19th February, 1861, was for Russia what the 4th August, 1789, had been for France. In the eighteenth century the condition of the peasantry was the principal social question in France; in the middle of the nineteenth century it was the principal social question for Russia. Prof. Kareiew lived through the period when the peasant question was being dealt with in Russia, and the present volume was written under the direct influence of the impression formed by the author during that period. It is a book which will well repay reading by all who are interested in the economic aspect of social questions.

*La Marche de l'Humanité et les grand hommes.* Par E. BOMBARD.  
Paris: Giard et Briere, 1900. Pp. 313.

M. Bombard is a disciple of A. Comte and the present work is a condensation of positivist ideas and principles. In the first part of the book the author gives a general sketch of the history of human development from the remotest time to the present day. In the course of this sketch he shows the relation of great men to the civilisation of the period in which they lived. In the opinion of M. Bombard the social unrest which characterises modern European civilisation is the result of the struggle which is going on between science and theology—a struggle which began in ancient Greece but did not become accentuated till the sixteenth century of our era. A crucial period was reached in 1789. Science then believed it was able to take complete direction of human affairs, and to supplant the sanctions of theology by sanctions of its own. But this was proved to be an illusion. Science failed in its attempt because it did not possess sufficient knowledge of biological and sociological laws. Auguste Comte has filled up this gap, and science is now able to fulfil the task which was too much for her a century ago. In the middle ages Catholicism served as a guide to the western world. It is now in ruins, but as yet nothing has taken its place. At present mankind owing to the spread of international relations is more than ever in need of moral direction. But mankind will not accept direction of this character unless it is resting on a scientific basis. Positivist morality alone possesses this characteristic: it alone can become universal and serve as a new guide to a bewildered humanity. M. Bombard does not consider that science necessarily leads to morality, and positivist morality is not scientific in the sense that it is the inevitable outcome of science. Positivist morality is scientific because it discards theology and is constructed solely of scientific materials. In the second part of his book M. Bombard deals with the evolution of the intelligence, and shows that the only cause of the superiority of the white races is to be attributed to their greater aptitude for abstract science. In an appendix the principles of positivism are briefly set forth so as to give the reader a summary view of the contents of positivist doctrine. We may say of M. Bombard's volume that it is a useful introduction to the writings of Comte, and the principles of his philosophy as understood by his disciples at the close of the century.

*Les Idées égalitaires Étude sociologique.* Par C. BOUGLÉ. Paris:  
Félix Alcan, 1899. Pp. 249.

M. Bouglé is already favourably known to students of French sociological literature by his excellent little book on social science in Germany,

published about four years ago. That book was principally confined to an exposition of the methods of sociological investigation which were dominant on the other side of the Rhine. But it showed that M. Bouglé had given deep and serious attention to his subject, and was quite capable of conducting sociological investigations on his own account. In the first part of the present volume he defines the idea of equality, he shows the reality of this idea, and then proceeds to give an anthropological, ideological and sociological explanation of it. M. Bouglé goes on to ask: Why does the idea of equality, such as he conceives it, appear only in western civilisation—at first in the decadent Greco-Roman world and secondly in our own day? His answer is based on two grounds—psychological deduction and historical induction—and it is to the effect that the social structure of western civilisation is peculiarly adapted to the success of the idea of equality. This idea is in part the result and in part the cause of the present constitution of modern western society. How far the idea of equality is the result and how far it is the cause of present social conditions and tendencies M. Bouglé does not undertake to determine. But he shows very clearly that equality is not a mere theory begotten in the brain of philosophers and that it is sufficient to refute Rousseau, let us say, in order to exterminate the equalitarian sentiment. This sentiment is not a theory originally matured in the minds of a few and implanted by reason, contagion, and imitation in the minds of the many. It is something much deeper than that. It is the outcome of the whole formation of modern society. Hence the idea of equality cannot be destroyed by assailing the arguments of its literary exponents. It can only be destroyed by undermining the whole social structure out of which it has arisen. If M. Bouglé's view of the origin and basis of the sentiment of equality is right—if equality is a product of the structure of society—the attacks upon this idea, which have been so fashionable in recent years, must be regarded as extremely shallow and futile. The operative power of this idea will not be affected by laughing Rousseau and his companions out of court. It will only be affected by revolutionising the social structure on which this idea is based. M. Bouglé's book both as regards its sociological method and its contents is well worth reading.

*Savants Penseurs et Artistes : biologie et pathologie comparées.* Par THÉODORE WECHNIAKOFF. Publié par les soins de Raphaël Petrucci. Paris: Félix Alcan (*Bibliothèque de philosophie contemporaine*), 1899. Pp. ix, 221.

This little volume of concise 'notes,' prepared for readers of French by M. Petrucci, forms a contribution or, at least, a supplement to the author's central work. *Typologie anthropologique des arts et des sciences*, and needs to be read in connexion with the latter. In an interesting preface the editor gives the story of the appearance of this greater work and its adjuncts. They have been compiled in the leisure hours of a long judicial and political career in Russia, and their publication covers a period of about forty years. They form collectively an attempt to analyse both the intellectual product and the intellectual producer, as mutually reacting. And in this particular volume we have, in mere outline, an attempt to classify sundry types of intellect as expressed in certain modes of production, and as suffering in certain specified ways, physical and mental, from the effects of those modes of production. These certain ways are exemplified by some one or two illustrious cases: Darwin, Da Vinci, Comte, and so on. Or rather, the illustrious cases may be said to have given the occasion for forming so many classes, or nuclei for

classes. And, consequently, the effect on the reader, as in other works of this nature, will probably be felt as unconvincing. The *cases* are no doubt of great interest. But statistically they cannot be said to establish anything. Suggestively they may no doubt have a certain scientific value.

*Kurze Erklärung der Ethik von Spinoza und Darstellung der definitiven Philosophie.* By Dr. RICHARD WAHLE, K.K.O.Ö. Professor d. Philosophie an der Universität Czernowitz. Wien und Leipzig, Wilhelm Braumüller, 1899. Pp. 212. Price, 3s. net.

The author claims to have shown in three articles (quoted, p. 3)—as against current interpretations—the “naked Naturalism and Positivism of Spinoza”. The present work—in its interpretative part—professes to give a short outline of the main positions of Spinoza, and is intended as a guide to the study of the Ethics. The author complains that K. Fischer had spoken of his previous efforts in a manner calculated to keep the public from studying them: and this has forced him to try once more to obtain a hearing (pp. 3-5).

Spinoza is “not quite right”; but the author intends to criticise only so far as criticism is necessary for understanding. More would be superfluous: for “the right Metaphysics are given in the second part of the work” (p. 7).

On the whole the interpretative part (pp. 18-163) is interesting, though by no means so original as Dr. Wahle appears to think. His main position can be indicated by the following quotations:—“Spinoza’s doctrine is pure Atheism” (p. 30): “There is nothing supernatural behind Spinoza’s Substance. His ‘God’ signifies the plainly-given visible All” (p. 34). Spinoza is no Pantheist—he believed “*der Gott sei mit Händen zu greifen*”—“the only frame into which all the propositions of the Ethics fit naturally and exactly is that of crude Naturalism” (p. 38). “The human mind . . . is nothing but the series of ideas, primarily only a single idea” (pp. 26, 45, 76, 77)—“Spinoza does not believe in that fabulous Unity of Consciousness of which our Psychologists are still enamoured” (p. 81). [This interpretation of Spinoza’s conception of the mind does not, I think, agree with Dr. Wahle’s remarks on the distinction between ‘*Actio*’ and ‘*Passio*’ (pp. 87, 88): and—at any rate in this extreme form—is not borne out by the text of the Ethics.] “Spinoza is a complete Positivist” (cf. e.g. pp. 46, 47 and *passim*). “The whole of the fifth part of the Ethics—far from showing that Spinoza was a Mystic—agrees completely with the Positivism of the earlier parts” (p. 151). The relation of Substance to the Attributes is simply that of a Thing to its Properties as the ordinary unreflective consciousness conceives it (p. 68).

In short, Dr. Wahle is so anxious to clear Spinoza of Mysticism that he makes him the exponent of the barest and crudest common sense. Spinoza’s ‘God’ is certainly not the God of Christianity or Theism:—but is as certainly not the ‘All’ or the ‘Absolute’ in the sense which Dr. Wahle appears to attribute to these terms, *i.e.*, the mere aggregate of things as the unreflective experience of every day takes them.

The author’s remarks (pp. 50 and 53) about *Natura Naturans* and *Naturata* are not clear: and his assertion (p. 57) that “there is no emphasis in Spinoza of a distinction between Indefinite and Infinite” leaves the important letter on the Infinite out of account. There are, however, some good remarks on the mode of interpreting a Philosopher (pp. 6, 9), on the geometrical method (pp. 18-24), and on Spinoza’s terminology (pp. 25-29)—though the author has not succeeded in justifying all that he says in the latter passage. There is an interesting discussion

(pp. 61-67) as to whether *Thought* and *Extension* are parallel on Spinoza's view (the interpretation which the author finally adopts), or whether they are simply two names for a unique series of Modes. The digression (pp. 95-123), containing the "System of all discoverable Ethical Regulatives," comes to the conclusion that no ethical theory can furnish us with demonstrable rules of action. The book would gain by its omission.

The second part of the book (pp. 167-212) contains an exposition of (what the author considers) the final Philosophy.

Section 1 (pp. 167-183), on "the Realm of the true Products," would have led—if the author had been consistent—to Solipsism of the extreme type, *i.e.*, to a view for which my feeling of the instant is the only reality—'*I myself*' being unreal. But the author, by an amazing inconsistency, arrives at certain ultimate realities to which he ascribes 'Resistance': a quality guaranteed apparently by our observation of the interaction of bodies (*cf. eg.*, pp. 171, 205).

The general conclusions of Section 2 (pp. 183-212), on "the Realm of the true Causes," may be indicated by a quotation from p. 211: "In earlier times, a new metaphysical theory might have been based on views like those we have advanced. But we have no inclination to do so: for us there remains the infinite 'know-nothingness' (*die unendliche unwissenheit*): there is left for us only the indestructible truth that we must not regard knowledge as an activity of a peculiar subject-factor standing over against other factors: nothing is left to us but the certainty that so-called Knowledge, Pictures, Occurrences are simply products of Original Factors". Our author, indeed, becomes excited and obscure, if any one mentions 'Knowledge' to him (*cf. eg.*, pp. 175 *ff.*, 204 *ff.*): and he insists that we are (and must remain) in complete ignorance as to the 'ultimate Factors'. Strange that he should be able to say so much about their positive character!

H. H. J.

*Philosophische Forschungen.* (Aus dem russischen übersetzt. Mit einem Vorwort des Verfassers.) Von B. TSCHITSCHERIN. London: Williams & Norgate, 1899. Pp. 536.

In a brief foreword to this German translation of his work the author admits that, in the century now expiring, philosophic thought in Russia has been dominated by German science and philosophy; but believes that, with the recent removal of many barriers to thought, the European revival of philosophy may find characteristic expression in his own country. Seeking above all things to be constructive and synthetic, he devotes the first half of his book to a review of the synthetic thought of Comte. Herein he claims to have "tested the content of all the principal sciences, both of nature and of mind, in their modern form, and to have brought together their philosophic results". And his conclusion is that "without a scientific elaboration of metaphysic no unity in scientific investigation is conceivable". In the second part he proceeds to set out what in his view constitutes the principles of metaphysic and also of logic. For, he holds, "metaphysic is nothing else than the deducing of the categories of logic and the application of them to being (*das Sein*)".

Whether he herein has greatly emancipated his own from German thought let readers judge. In intention the work is worthily ambitious. The English reader will find interest in seeing British experientialism, in so far as it rejects all *a priori* elements, termed "a theory of stupidity," *i.e.*, of unreason.

*An der Wende des Jahrhunderts.* Von Dr. LUDWIG STEIN. Freiburg: Mohr; London: Williams & Norgate, 1899. Pp. 415.

Dr. Stein is already favourably known in the world of social science by his excellent work on social philosophy published a year or two ago. The present volume is not a systematic exposition like its larger predecessor; it is a series of twenty essays, several of which have already appeared in print in various German periodicals. The only bond which unites them into a sort of consistent whole is that all these essays deal more or less directly with the philosophy of civilisation. In his work on social philosophy Prof. Stein dealt with the social question by the comparative historical method. In the present volume he deals with a number of other problems by examining them in accordance with exactly the same method. Among these problems are the nature and task of sociology, Darwinian and Socialist ethics, the philosophy of peace, the political and social tasks of the twentieth century, religious optimism, natural laws and moral laws. Essays of a somewhat different character are devoted to the subject of Greek philosophy among the Arabs, the last works of Nietzsche and Nietzsche as a philosophical classic. The essays on Greek philosophy among the Arabs are very well done. The whole book in fact is full of interest, and where Dr. Stein does not succeed in convincing he always awakens thought. Essays dealing with such a variety of subjects and many of them necessarily controversial in character cannot be discussed in detail in the space at our command. But we may say of them that they are the work of a man of keen intellect and comprehensive vision who is abreast of all the best knowledge of his age.

*Del libero arbitrio.* By C. BIUSO. *Libri tre.* Firenze: G. Barbèra, 1900. Pp. 303.

Of the "three books," the first classifies systems of philosophy and theology with respect to the free-will question; the second criticises them in this connexion; the third gives the author's view on the problem. To be confronted by yet another book on this subject—*ardua e infruttuosa*, to quote the author—is scarcely exhilarating. Its vitality is almost exasperating. And if M. Biuso seems with one hand to bring the discussion within hailing distance of closure, he gives with the other a fresh stimulus to controversy. An adequate historical review and the spread of a grasp of psychological analysis: by means of these agencies further discussion should wither away. The former is given us in books i. and ii., and is both concise and thorough so far as it goes. It is only regrettable that, at this time of day, the inquiry should still have been limited to Socrates and to Judaism for the philosophical and theological sources of the controversy respectively. The author quotes the dictum that belief in the freedom of the will is impossible without belief in a hypostatic *anima spirituale*. But if he had exercised the least curiosity to discover whether his subject ever presented itself in the problems of the other half of the world's older philosophies, he would have been able to include a striking confirmation of his dictum. I refer to the reasons given by the founders of Buddhism for rejecting the theory of an unconditioned psychical substance. Those reasons are now as accessible to readers of English and German as the Dialogues of Plato.

The stimulus to further discussion is due to the fact that the author's criticisms lead up to a confession of his Materialistic standpoint. The identification by the Materialist of matter with the real is such 'penal servitude for life' to most philosophers that the writer's criticisms will



not be taken as seriously as they may deserve to be. In no case will a work emanating from such a standpoint be accepted as a final summary of controversy. And this, again, is regrettable.

C. A. F. RHYS DAVIDS.

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- M. Moncalm, *L'Origine de la Pensée et de la Parole*, Paris, F. Alcan, 1900, pp. 316.
- H. Delacroix, *Essai sur le Mysticisme Speculatif en Allemagne au 14ième siècle*, Paris, F. Alcan, 1900, pp. xvi., 287.
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- G. Tarozzi, *Della necessità nel fatto naturale ed umano*, Torino, E. Loescher, 1896, 97, 2 vols., pp. 289 and 351.
- G. Tarozzi, *Ricerche in torno ai fondamenti della certezza razionale*, Torino, E. Loescher, 1899, pp. viii., 272.
- F. de Sarlo, *Il concetto dell'anima nella psicologia contemporanea*, Firenze, 1900, pp. 45.
- L. M. Billia, *L'Esiglio di S. Agostino*, Torino, Fratelli Bocca, 1899, pp. xi., 148.
- Encyclopædia Medica*, vol. iii., Edinburgh, Wm. Green, 1900, pp. vi., 544.

## XI.—PHILOSOPHICAL PERIODICALS.

**PHILOSOPHICAL REVIEW.** Vol. viii., No. 6. **G. T. Ladd.** 'The Philosophical Basis of Literature.' [The philosophical basis of literature is "man's power to express his ideas of value in language whose form commends itself to a cultivated æsthetical appreciation as suitable to such ideas". Detailed consideration of language, of the philosophy of form, and of ideas of value (happiness, sublimity, moral excellence), with illustrations from literature.] **W. Caldwell.** 'Von Hartmann's Moral and Social Philosophy (II.). The Metaphysic.' [The various forms of the metaphysic of ethics: metaphysical monism, the religious principle, the absolute moral principle, the negative-absolute-endæmonistic (salvation) principle. The positive outcome of Hartmann's dialectic seems to be that morally educated and experienced men can help to redeem humanity by freeing it from the happiness-notion. Various uses of the term 'unconscious,' as (1) the unconscious in nature and history; (2) the unconscious as desire; and (3) as evil. Outcome of the philosophy of the unconscious: "in the moral life we may be obliged to follow out many ends that are prescribed to us more by the unconscious logic of our nature than by our conscious reason, and also by the unconscious logic of nature or of history".] **H. Davies.** 'Psychological Experiences Implicating the Concept of Substance.' [The concept of substantiality is involved in (1) 'awareness' of an object; (2) all experiences where the mind actively discriminates itself as the ego; and (3) the sense of a transcendent activity applying the logical function on the basis of essential and mutual activity between the two orders of our experience. Critique under these three rubrics of the views of Kant, Wundt, Ward, James; Spinoza, Kant, Spencer; Kant, Hegel.] **Reviews of Books. Summaries of Articles. Notices of New Books. Notes.** Vol. ix., No. 1. **G. H. Mead.** 'Suggestions towards a Theory of the Philosophical Disciplines.' [Assumes that "analytical thought commences with the presence of problems and the conflict between different lines of activity," and continues as the expression of such conflict and the solution of the problems involved. On this basis, metaphysics may be regarded as the statement of the problem, deductive logic as interpretation in terms of past experience, psychology as the abandoning of all but subjective validity and the implied looking forward to new meanings, inductive logic as the advance to a new universal, etc. Follows Dewey, but lacks Dewey's clearness.] **F. Thilly.** 'Conscience.' [Psychological analysis of conscience, as a specific feeling, or complex of feeling and impulse. This feeling of obligation comes late in the history of the individual and the race. It may become fixed and habitual, and be heritable. The judgments of conscience are analytical.] **W. A. Heidel.** 'Metaphysics, Ethics and Religion.' [The typical form of progressive mental life is "intellectually mediated activity toward the realisation of ends, the cycle being completed by the purposed act". To understand the standpoints and conceptions of metaphysics, etc., we have to examine them with a view to their localisation at the appropriate juncture in the teleological cycle at which they take their rise. A second exposition of Dewey's

principles.] **F. Paulhan.** 'Contemporary Philosophy in France.' [(1) The philosophy of the special sciences: psychology, aesthetics, sociology. (2) The general philosophy of the sciences (Lalande, Durand de Gros, Piat). (3) The philosophy of philosophy: the schools of Ravaisson and Lachelier and of Renouvier (Bergson, Fouillée, Tarde, Ribot, Paulhan). (4) Current tendencies in the social mind to which French philosophy appeals.] Reviews of Books. Summaries of Articles. Notices of New Books. Notes. **W. K. Brooks** and **M. F. Washburn.** 'Naturalism and Freedom.'

**PSYCHOLOGICAL REVIEW.** Vol. vii., No. 1. **H. Muensterberg.** 'Psychological Atomism.' [Plea for a regress, behind the sensation-element of structural psychology, to psychological atoms. Hypothetical characterisation of these, as absolutely dissimilar each to all; all co-ordinated; varying through all degrees of vividness; interacting by association and inhibition, etc.] **F. H. Verhoeff.** 'Shadow Images on the Retina.' [Description of Le Cat's experiment, and summary of the various stages in its explanation. Account of an inversion of this, a 'white shadow' experiment, with a small black spot replacing the pin-hole.] **C. Wissler** and **W. W. Richardson.** 'Diffusion of the Motor Impulse.' [There is a diffusion of the motor current in the arm, following out "an order corresponding to anatomical and functional relations in such a way as would occur in an irradiation of the current in the cells of the cortex or in the spinal cord". The current also follows the lines of development, showing "constant leakage into the old channels".] **M. F. Washburn.** 'The Colour Changes of the White Light After-image, Central and Peripheral.' [(1) The dependence of the colour series on duration and intensity of stimulus. Method of overlapping images. (2) The colour changes of the peripheral white light image. Accurate observations; too detailed for summary.] **J. Jastrow.** 'The Pseudoscope and Some of Its Recent Improvements.' [Wood's stereoscopic pseudoscope; Stratton's and Ewald's mirror pseudoscopes; Wheatstone's total reflexion pseudoscope; interchanging of stereoscopic half-pictures.] Discussion and Reports. **H. N. Gardiner.** 'Professor Stumpf on Emotion.' [The significance of Stumpf's article lies in its recognition of the value of the 'sensualistic' theories and in the concessions made to them.] **H. M. Stanley.** 'The Genesis of General Ideas from Group Perception.' [Brief criticism of Wundt, James, Romanes. Correlative with presentation and recognition (representation) of the individual are presentation of masses and recognition of component members. Out of the latter, the vague hypothetical general idea evolves as a shorthand method, in turn denoted by language.] **S. I. Franz.** 'On After-images: an Explanation.' [Reply to Washburn.] **J. H. Hyslop.** 'Newspaper Science.' [Denies the writer's intention scientifically to demonstrate the immortality of the soul.] Psychological Literature. New Books. Notes.

**Monograph Supplement.** Vol. iii., No. 1. **B. B. Breese.** 'On inhibition.' [Various views of physiological and psychological inhibition. Experiments. (1) Inhibition of sensation by sensation. Binocular rivalry. Effects of effort to hold monocular field, elimination of eye-movement, counting lines of monocular fields, unilateral bodily contraction, coloured borders, intensity of stimulus, etc. (2) Inhibition of mental states by suppression of their motor elements. "The condition of consciousness is the transference of the action of the stimulus into or toward motor activity." Application to education.] No. 2. **S. I. Franz.** 'After-images.' [Study of visual after-images, in regard to limen, latent period, duration, fluctuations, qualitative change, space-relations, retinal transfer. Relation to

sensation, memory, imagination; history; bibliography.—The observations are good; but the author seems to have no perspective in theoretical matters.] Vol. vi. No. 5. **W. P. Montague.** 'A Plea for Soul Substance.'—1. [The mystery of the seeming efficacy of final causes in the world of mental facts has called forth five explanations: those of pure teleology, materialism, occasionalism, parallelism and spiritualism. The first three may be briefly dismissed. Parallelism proves inadequate, on close logical scrutiny. It remains to assume the existence of a soul-substance. Descriptive psychology needs this, and we have a right to hypostatise the conception as soon as it is properly defined.—A loose paper.] **R. Dodge.** 'The Reaction-time of the Eye.' [A stimulus is thrown on the blind spot of the resting eye. Since any slight movement will bring it into view, the natural movement following some peripheral stimulation will do so, provided it last long enough. The duration of the stimulus which just allows the observer to see it, after the cue for movement is given, is the reaction-time of the eye. After correction made for constant errors, the time for two observers proved to be 162 and 170  $\sigma$  respectively.] **G. A. Coe.** 'A Study in the Dynamics of Personal Religion.' [Examination of the conversion-experiences of seventy-four persons (nearly all college students) by a highly elaborate questionnaire, supplemented by personal interviews, scrutiny of temperamental manifestations, interviews with friends of those under observation, and hypnotic experiments. "Three sets of factors favour the attainment of a striking religious transformation: the temperament factor, the factor of expectation, and the tendency to automatism and passive suggestibility."] Shorter Contributions and Discussions. **M. W. Calkins.** 'Attributes of Sensation.' [Sensation cannot have attributes, since it is an elemental fact of consciousness and, as such, irreducible. Moreover, duration is a complex of conscious elements, and quality, extensity and intensity are elemental processes in their own right.] **M. Meyer.** 'Is the Memory of Absolute Pitch Capable of Development by Training?' [Experiments on forks and piano, showing (against von Kries) that systematic and lasting practice develops memory of absolute pitch.] Psychological Literature. New Books. Notes.

AMERICAN JOURNAL OF PSYCHOLOGY. Vol. xi. No. 1. **I. M. Bentley.** 'The Memory Image and its Qualitative Fidelity.' [A systematic and successful attempt to isolate the memory image, to compare it qualitatively with the sense-complex from which it derives, and to estimate the extrinsic and intrinsic factors tending to modify its original quality. (1) Memory of so simple a thing as a coloured or grey disc may be mediated by a colour or brightness image, by names (verbal descriptions or associates), by affective processes (felt organic sensations), or by strain sensations in the head and about the trunk. (2) Greys and colours exposed in daylight tend (if the subject is at all visual in type) to lighten in visual memory. (3) Greys shown in the dark tend to darken in visual memory during an unilluminated interval. These two facts show the importance of peripheral influences on memory, and suggest that it is often only by a combination of various memorial resources that retention is made definite and exact. (4) Qualitative fidelity shows no constant change from 2 to 6 seconds after the cessation of stimulus; it loses in accuracy from 10 to 60 seconds, the direction of change being constant. Above, 1 minute to 5 minutes, the inaccuracy increases. On the other hand, the image is more readily producible after 5 than it is after 1 minute. (5) Images are available in the great majority of cases of brightness and colour memory. Under such circumstances, memory is, on the whole, somewhat more accurate, though perfect accuracy is compatible with

the absence of an image. (6) The average duration of the memory after-image is quite constant.] **V. F. Moore.** 'The Psychology of Hobbes and Its Sources.' [Sketch of Hobbes' psychology from the *Leviathan*, *De Corp. De Hom.*, and *Human Nature*. Bacon furnishes the conception of psychology as science, the general empirical trend of thought, and various special suggestions. Descartes gives the conception of nature as mechanism, and the extension of the mechanical principle to body and mind.] **F. Angell** and **H. Harwood.** 'Experiments on Discrimination of Clangs for Different Intervals of Time (1.)' [Difference between discrimination of two successive impressions and serial memory. Between the limits of 1 second and 60 seconds there is "no general law of sensory memory," i.e., no loss of memory with lapse of time, in experiments with clangs (reed notes) whether with or without distraction. The results therefore disagree with those of Wolfe. We must examine into the various modes of judgment-formation, and into the validity of the old doctrine of recognition by a memory-image.] **W. S. Small.** 'Notes on the Psychic Development of the Young White Rat.' [Extracts from Diary, first to twenty-eighth day. Discussion of sucking; sensations (especially 'sense of support' and orientation, and sight and hearing); instinctive activities (huddling, play, etc.); affective states (fear, curiosity); and intelligence.] **M. H. Carter.** 'Romanes' Idea of Mental Development.' [Romanes held but vaguely that mind is casually related to organic evolution. The relation of mind to body is, for him, one of complete monism. Mind covers only those vital manifestations which give evidence of purpose and choice. Mental Development consists "essentially in a progressive co-ordination of progressively-developing faculties," preceded by a similar development of the physical substrate of mind, the body.] **E. B. Titchener.** 'Minor Studies from the Psychological Laboratory of Cornell University (XVIII.).' **H. O. Cook.** 'Fluctuation of the Attention to Musical Tones.' [Maintains, against Heinrich, that minimal tones (acoumeter, tuning-fork, blown bottle) fluctuate as do minimal noises.] Psychological Literature. Notes and News. Books Received.

REVUE PHILOSOPHIQUE. May, 1900. **F. Le Dantec.** 'Homologie et Analogie.' [A long and interesting article, discussing the principles which should regulate natural classification.] **Gérard-Varet.** 'La Psychologie Objective.' [History studies events; sociology, states; objective psychology, tendencies. These tendencies are universal and permanent, although in the course of mental development they may be pushed into the background or take on forms in which they are not immediately recognisable. Hence they are the subject of objective, rather than subjective, psychology, for the latter deals with the higher forms of mind, i.e., self-consciousness, while the former is concerned with thought in its spontaneous manifestations.] Notes et discussions. **Claparède.** 'Sur l'audition colorée.' **Richard.** 'Les droits de la critique en matière sociologique.' Revue critique. **G. Richard.** 'Travaux italiens sur la criminalité.' Analyses et Comptes Rendus. June, 1900. **P. Paulhan.** 'Les Esprits Synthétiques.' [In minds of this type ideas are assimilated *en bloc* instead of singly, which frequently involves inner contradiction and inconsistency; on the other hand they exhibit a mental robustness generally lacking in those of the analytic type.] **Dugas.** 'Fanatisme et Charlatanisme.' ["Normal ideas" are such as engender (1) judgments; (2) actions. 'Pure' ideas fail to do this. They may engender (a) actions, but such as are vain and foolish only; (b) judgments only and these materially false; (c) neither judgments nor actions.] **Calinon.** 'Sur la Géométrie Numérique.'

**Blum.** 'Le Mouvement Pédologique et Pédagogique (I.)' Analyses et comptes rendus. *Revue des Périodiques étrangers.*

SOCIETY FOR PSYCHICAL RESEARCH, PROCEEDINGS. No. 35, July 1899, pp. 286. **Charles Richet.** 'On the Conditions of Certainty.' [Announces that upon recent careful re-examination he is once more convinced of the genuineness of Eusapia Paladino's 'physical phenomena'.] **Mr. F. W. H. Myers** adds a note to the same effect.] **Alice Johnson.** 'Coincidences.' [A careful and valuable discussion of the whole subject covering 170 pp. full of interesting matter.] **Mary H. Kingsley.** 'The forms of apparitions in West Africa.' [A most entertaining anthropological study of native superstitions.] **Dr. J. Shepley Part.** 'A few notes on occultism in West Africa.' [Evidence as to cases of occult transmission of intelligence by natives which came within the author's knowledge.] **F. C. S. Schiller.** 'Psychology and Psychical Research.' [A polemical reply to Prof. Münsterberg's attack on the Society for Psychical Research in his article on 'Psychology and Mysticism' (*Atlantic Monthly*, January 1899). Treats him with entire disrespect and accuses him of 'grossly misrepresenting both the aims and methods of the Society for Psychical Research.'] **F. W. H. Myers.** 'Dr. Morton Prince's Experimental Study of Visions.' [A case of tripartite personality.] **A. R. Wallace** and **J. G. Smith.** 'Extract from J.-E. de Mirvilli's account of the experiences of Robert Houdin the conjurer with Alexis Didier the clairvoyant.' Reviews, Lists of Members. No. 36. February, 1900, pp. 107. **Andrew Lang.** 'The Fire Walk.' [Amongst other remarkable accounts contains the experiences of a British Resident in Rarotonga who received the '*mana*' of a local priest and walked barefoot across twelve feet of white-hot stones unscathed, and feeling only "something resembling slight electric shocks". Mr. Lang proffers no theory of this extraordinary but apparently widely and well-attested phenomenon.] **Mrs. Henry Sidgwick.** 'Discussion of the Trance Phenomena of Mrs. Piper.' [Points out that the spiritistic interpretation of these is not free from difficulty; suggests that telepathic rather than direct action of the departed may be involved, affecting either the sitter's or Mrs. Piper's subliminal mind and worked up by Mrs. Piper's trance personality.] **Andrew Lang.** 'Reflections on Mrs. Piper and Telepathy.' [Admits a "bias not to believe that the dead are in any way mixed with sittings at so many dollars," rejects "the savage theory of possession" and suggests that "telepathy *à trois*" may perhaps be made to suffice.] **F. C. S. Schiller.** 'On some Philosophic Assumptions in the Investigation of the Problem of a Future Life.' [A theoretical paper. Postulates 'fundamental identity between our own and any other' world; hence psychical continuity, and in spite of this a dissociation which is psychologically explicable. An "idealistic experientialism" throws light on the inconclusiveness of the phenomenon of 'death' and rejects attempts to settle the question *a priori*.] **Harlow Gale.** I. 'A Study in Spiritistic Hallucinations' in which the subject's honesty was above suspicion, and II. 'A Case of Alleged Loss of Personal Identity' in which it was not.] Notes and Reviews.

REVUE NÉO-SCOLASTIQUE. No. 23. According to **D. Nys** ('Étude sur l'Espace'), the *internal* space occupied by a body is, from the ontological point of view, identical with concrete extension, and thus its essential functions are to extend the material mass, to limit its volume, and to attach it in an exclusive manner to a definite place. On internal place, as on their foundation, are based all those relations of distance which, in their aggregate, constitute real space. **P. de Munnynck** ('L'Hypothèse

scientifique') agrees with Ostwald in holding that a causal hypothesis is never proved in the proper sense of the word. Such an hypothesis is neither true nor false. It is simply good or bad, useful or harmful, according to circumstances. St. Thomas would seem to have been of this opinion, for in the commentary on Aristotle's treatise *De Caelo et Mundo* he says: "The suppositions of astronomers are not necessarily true. Nor are they to be regarded as necessarily true even when they explain the facts of observation, for it may very well be that at some future time an explanation equally satisfactory, though as yet quite undiscovered, may present itself". **G. de Craene** ('La Connaissance de l'esprit') maintains that though, by means of that faculty of abstraction which enables us to apprehend the essence or nature of bodies apart from the notes which characterise it in individual bodies, we may, up to a certain point, place ourselves in relation with things immaterial, nevertheless it remains always true that material things constitute the proper object of human thought. From this it follows that our idea of spirit or immaterial substance is a purely negative idea. **N. Kaufmann** ('La Finalité dans l'Ordre moral'), following Aristotle and St. Thomas, argues (1) that the perfection of the rational nature of man is the immanent end of moral activity; (2) that the rational nature of man is the norm and law of moral activity. Reason recognises the nature of man in all its relations, and, when it is sound (*λόγος ὁρθός*), it decides rightly as to what is in harmony with that nature, and thus constitutes the norm of conduct; (3) that the rational nature of man is the basis of virtue, and, since it tends towards its own perfection as its end, the principle of finality. No. 24. **P. de Munnynck** ('L'Hypothèse scientifique,' *suite et fin*) who, in a previous number of the *Revue*, had contended that hypotheses are not true in the proper sense of the word, inasmuch as they have no rigorously logical connexion with fact, now upholds the usefulness of these hypotheses. From the psychological standpoint, their usefulness is great since they gratify the natural instinct of the reason to seek for causes, an instinct which had been artificially repressed during the processes of mere observation. But, besides this subjective, they have also, as is obvious, an objective value, seeing that they contribute largely to the progressive conquest of the secrets of nature. For their objective usefulness it is necessary however that they should be simple, representative, *i.e.*, that they should appeal to the imagination, comprehensive and free from opposition to any established fact. **N. Kaufmann** ('La Finalité dans l'Ordre moral') continuing his studies of finality in the moral order, as set forth in the writings of Aristotle and St. Thomas, maintains that in the moral perfection of human nature there are three degrees, and, corresponding with these three degrees, three tendencies of human nature. (1) The individual man possesses, by virtue of his nature, a certain fundamental perfection which nature strongly urges him to preserve and develop. But (2) man in isolation cannot fully realise the imperative necessities of his nature. He needs for their fulfilment the aid of human society by means of family ties, association with those of his kind, and relation to the State which is the most perfect of societies. To this need corresponds the social tendency. But (3) the greatest perfection of man's is the beatitude which results from union with God, and to this alone man's nature tends not as to a means, but as to its ultimate end. **D. Mercier** ('La Notion de la Vérité') accepts the traditional definition of logical truth, *viz.*, the "agreement of thought with reality" but insists that "thought" in this connexion primarily stands for judgment, while "reality" primarily stands for the objective identity of the two terms of the judgment, and



only secondarily for the objective reality of each of the two terms. **E. van Rocy** ('Le Kantisme et la Théologie Protestante') in an article that is too brief to be an adequate treatment of its subject, maintains that Kant has formulated in their extreme consequences the principles of Protestantism.

ZEITSCHRIFT FÜR PSYCHOLOGIE UND PHYSIOLOGIE DER SINNESORGANE. Bd. xxii., Heft 3. **M. Ettlinger**. 'Zur Grundlegung einer Ästhetik des Rhythmus.' [We may approach the study of rhythm formally, asking how rhythmical art-forms are constituted; or we may approach it psychologically. The latter is the correct way. For there are no pure rhythmical art-forms; rhythms have to be 'given' by some one, and there is no instrument for their measurement; and the reduction of rhythm to time and intensity is unsatisfactory. (1) Subjective rhythmisation. The series of sounds is not an objective unity: sensation alternates with 'empty' times. Critique of Wundt's theory of tense and relaxed expectation. What we actually have is a continuous, pleasant feeling of activity or tension, varying only in concentration. It is an objectified feeling, i.e., a feeling of æsthetic sympathy. The peculiarity of the rhythmical structure is the recurrence of groups within a whole—not the repetition of simple impressions. As the strokes come, we have two rival tendencies—the one holding us back, the other pointing us forwards. The rhythmically minded hearer escapes the dilemma by putting life and effort into the series; there is a movement onward, not a mere temporal sum of separates. 'Inner accentuation' shows the action of the secondary, inhibitive tendency; the unaccented terms show the primary movement. The latter is what carries the feeling. Cf., Lipps' theory of the geometrical optical illusions. (2) The objective causes of rhythm. These are intensive relations; the duration of the sensations; the mode of their succession. A fourth factor, qualitative difference of sensations, is of great importance only in music. The various causes may function vicariously, though they have not the same value for rhythmisation. (3) Analysis of the rhythmical art-forms and explanation of their pleasingness. The equipollence of rhythmical groups lies in the fact that in all alike there is accomplished a complementary suppression and restoration, no matter what the number of terms, time, intensity differences, etc., may be.] Besprechungen. **Kiesow** on Rollett's 'Beiträge zur Physiologie des Geruchs, des Geschmacks, der Hautsinne und der Sinne im Allgemeinen'; **Külpe** on Baldwin's 'Die Entwicklung des Geistes beim Kinde und bei der Rasse'. Literaturbericht. Bd. xxii., Heft 4. **B. Erdmann** und **R. Dodge**. 'Zur Erläuterung unserer tachistoskopischen Versuche.' [Detailed reply to Wundt's criticism (*Phil. Stud.*, xv., 287) of the authors' 'Untersuchungen über das Lesen auf experimenteller Grundlage.'] Besprechung. **T. Ziehen**: 'Kritischer Bericht über wichtigere Arbeiten auf dem Gebiete der Physiologie des Centralnervensystems der Wirbeltiere'. Literaturbericht.

PHILOSOPHISCHE STUDIEN. Bd. xv., Heft 3. **W. Wundt**. 'Zur Kritik tachistoskopischer Versuche.' [There are six requirements of the tachistoscope. The stimulus must be so short that eye-movements are precluded; it must be so small that direct apprehension of the whole is possible; the illumination of the exposed surface must be uniform; favourable adaptation of the retina must be secured; persistent after-images must be avoided; the time of exposure must not be long enough for the attention to wander from part to part of the field. Dodge and Erdmann have paid almost exclusive regard to the first three of these.

As philosophers and psychologists they have taken account of psychological and of external physical conditions; but they have neglected the physiological intermediaries.] **Z. Radoslawow-Hadji-Denkow.** 'Untersuchungen über das Gedächtniss für räumliche Distanzen des Gesichtsinnes.' [Survey of previous literature. Apparatus and method. Results: memory decreases with increase of time interval, its keenness being approximately proportional to the logarithm of the time. Factors making for individual differences are: eye-measurement; practice; the dependency of the liminal value upon the ideal and the absolute memory (the memory for a just noticeable difference, and the ability to cognise differences that transcend a certain magnitude, after the lapse of times of any length, respectively); the magnitude of the minimal change; fluctuations of attention, periodicity of the memory function, secondary conditions accompanying a too short interval; disposition, fatigue (as affecting the mean variation). Experiments with filled intervals (auditory or visual impressions, reading). Discussion of special points: eye-measurement; the ideal and the absolute memory (the curve of actual memory limina is shown, very ingeniously, to lie between the curves of the ideal and the absolute memories, the former of which is never realised, and the latter only within limits and under conditions); practice; associative relations and disturbances in reproduction; the overestimation of the distance of comparison; observation times; reproduction times. Theory: discussion of observation and reproduction, in the light of the experimental results. The betterment of memory under distraction, and its interpretation in terms of avoidance of fatigue; the intermittent character of observation; the part played by feeling in reproduction.]

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. Bd. vi., Heft 1. **A. Müller.** 'Die Metaphysik Teichmüllers.' [Expounds Teichmüller's account of the concept of *being*. Teichmüller distinguishes two kinds of being: (1) Ideal being, which is represented by the copula "is" and answers the question "what?" This ideal being has no temporal implications. (2) Real being, which is represented by the conjunction "that" and by the existential use of the verb "to be". Temporal distinctions as expressed by grammatical tenses belong only to real being. Ideal being belongs to the object of consciousness as such. Real being belongs to psychical activities or processes. To complete the account of being we must consider the union of ideal and real being in conscious life. They are embraced and combined by the "ego". To the ego, as such, belongs a third type of being, which is presupposed in ideal and real being. This is called by Teichmüller "substantial being". The article proceeds to give an interesting account of the way in which the "ego" comes to the knowledge of "substantial beings" other than itself.] **L. Goldschmidt.** 'Kant's "Widerlegung des Idealismus".' [Defends Kant's consistency in the two editions of the *Kritik* against Kuno Fischer.] **E. Bullaty.** 'Das Bewusstseinsproblem.' [The antithesis of a subjective inner and an objective outer world is an antithesis which only exists in a consciousness that comprehends both. Both are phenomenal; they are known only in contrast to each other, and derive their whole meaning from this contrast.] **Paul Natorp.** 'Bericht über deutsche Schriften zur Erkenntnistheorie aus den Jahren 1896 bis 1898.' [Deals especially with v. Hartmann's *Kategorienlehre*.]

VIERTELJAHRSSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE. **Eugen Posch.** 'Ausgangspunkte zu einer Theorie der Zeitvorstellung.' Sechster Artikel. [Maintains the theory of time as merely subjective form.

Apart from reminiscent consciousness the time series has no existence.]

**Bastian Schmid.** 'Aus dem Seelenleben der Insekten.' [Favourable comparison of Wasman's work with those "evolutional" psychologists who rush into anthropomorphic interpretation in their eagerness to establish kinship between the human and animal mind. Most actions of animals are explicable by association, though rudiments of Conception and Judgment are also present.] **C. Siegel.** 'Versuch einer empiristischen Darstellung der räumlichen Grundgebilde und geometrischen Grundbegriffe mit besonderer Rücksicht auf Kant und Helmholtz.' [Criticises Kantian doctrine. Kant's first two arguments, which are meant to show that space is *a priori*, really show that it is a concept and not an intuition, and his last two, which are meant to show that it is not a concept, really show that it is not *a priori*, but empirical. Account of the formation of geometrical concepts by the idealising of perceptual experience. In the idealising process a decision is made between alternatives which perceptual experience leaves open because it is not exact enough to select one rather than another. The alternatives selected by the Euclidean Geometry are the most simple and convenient. But others are possible. The space in which physical process takes place may belong to a non-Euclidean type. All that experience shows is that within the limits of observation it cannot be distinguished from Euclidean space. The article concludes with a criticism of Helmholtz's position.]

PHILOSOPHISCHES JAHRBUCH. Bd. xii., Heft 3. **I. Straub.** 'Kant und die natürliche Gotteserkenntnis.' [This is the first of two papers, in which the writer, after noting that Kant's division of the proofs of God's existence into Ontological, Cosmological and Physico-theological, is inadequate, admits that the Ontological proof is worthless, but defends the Cosmological proof. Kant's argument is vitiated by his false conception of a cause as a synthetical *a priori* idea, and his exposition of the proof a mere caricature. His attempt to reduce it to the Ontological proof shows that he never understood it.] **E. Rolf.** 'Moderne Anklagen gegen . . . Sokrates, etc.' [In conclusion, the writer, with certain limitations, upholds the high morality of Aristotle, and his doctrine of God and the soul. Plato is wrongly accused of Pantheism, and was a strong believer in the soul's immortality. And Socrates, though his systematic scepticism makes him at times speak doubtfully of God and the soul, may be proved by decisive passages to have believed in both.] **I. Bach.** 'Zur Geschichte der Schätzung der lebenden Kräfte' (concluded). [The writer expounds Newton's conception of space as the immensity of God, maintained by Clarke against Leibniz, and goes through the various phases of the controversy. Newton's idea of a *tempus absolutum* (apart from movement) was also contradicted, and eternal time shown to be a contradiction in terms.] **J. Mausbach.** 'Zur Begriffsbestimmung des sittlichen Gutes.' [Whether moral goodness consists in its being a progress towards happiness, is a question in debate between the writer, who denies, and Dr. Cathrein, who affirms it. In this, the first of two papers, Dr. Mausbach proceeds to show that his opinion agrees with that of Aquinas and Suarez. All morality consists in doing the will of God, independently of the happiness which results therefrom.]

## XII.—NOTE.

### MR. MACCOLL'S QUESTION ON P. 144 OF *MIND* FOR JANUARY, 1900.

I answer Mr. MacColl's question not for his information but my own. I have much admired his clear and useful system of notation for Symbolic Logic, yet I fear that I must have misunderstood something in his way of working it, and I write this answer in the hope that if there is a mistake I may discover where it lies.

Query. Whether the implication *If it is probable that A is certain it is certain that A is probable* is always true.

It seems to me that while the fact may be so the implication is never valid, that is to say, you might state a case in which it was probable that A was certain and also certain that A was probable, but in order to ensure the truth of the latter statement something more would necessarily be assumed than was contained in the first.

*It is probable that A is certain* is quite consistent with *it is possible that A is false* and even with *it is possible that A is impossible*. That a thing is probable means that more than half the chances are in its favour, but the other chances may be of any kind, unless it is expressly stipulated that some chances are excluded. Let ten chances make A certain, one make it false and one impossible, then it is probable that A is certain, but for all that it may be false or impossible.

I do not see how you can ever under any circumstances infer certainty from probability.

It would clear my thought very much if I could put all possible cases in the Symbolic Notation, but this I cannot do, because as I look at it the two kinds of certainty, probability, etc., ought to be more thoroughly separated than they are by the method of indices. It should be shown that they are always to be kept separate and not mixed in working, and this is not done when they are merely written one after another. A is certain, means either that A is certain in itself, that is to say, is determined by its causes, so that A, if it is an event, either has happened already and so is determined, or if still future is certain to happen, or else it means that the data at my disposal make me certain of it. Now suppose for the moment we put the indices which mark these certainties on opposite sides. If there is to be an eclipse to-morrow, then it is certain, that is to say causes already in existence determine the event. Call this  $A^c$ . If I see the fact stated in a reliable Almanac then I am certain of it. Call this  $\epsilon A^c$ . I am certain that A is certain. But say that a friend of doubtful accuracy tells me that he has seen the statement in the Almanac, then  $\epsilon A^c$ , it is probable that A is certain; but is it certain that A is probable? By no means, for knowing the facts I say,  $A^c + A^?$ , An eclipse to-morrow is either certain or impossible. Other cases might be stated, but they would suggest another alteration in the notation and this might not be admissible.

Now all this appears to be so plain and evident that I am afraid I must have in some way or other mistaken Mr. MacColl's meaning, and if so I would be very glad to know where.

J. N. SHEARMAN.